STEAM EDUCATION FOR SUSTAINABLE DEVELOPMENT and FUTURES LITERACY

SGD13 Climate Action and Sustainable Development

Programme Phase: Strand 3 Global Connections

Leaving Certificate Support Lessons

TOPICS: Biodiversity, Environment, Science, Sustainability

4 QUALITY EDUCATION

11 SUSTAINABLE CITIES AND COMMUNITIES

14 LIFE BELOW WATER

15 LIFE ON LAND

SFI Discover Science Foundation Ireland

An Roinn Oideachais Department of Education

SDG 13 Strand 3 Global Connections Support Climate Action and Sustainable Development

Climate Action & Sustainable Development

Strand 3

Global Connections

Module Summary: CASD Global Connections

This pathway of curated lessons from Muinín Catalyst programmes is designed to support students and teachers engaging with Strand 3 of the Climate Action and Sustainable Development (CASD) Senior Cycle subject.

Strand 3 invites learners to situate their own experiences of climate action and sustainable development within wider systems of governance, economics, and global inequality. Through these lessons, students critically examine how decisions are made, who holds power, and how the costs and benefits of climate change are distributed across the world.

Grounded in inquiry, design thinking, and futures literacy, the lessons enable students to explore pressing issues such as ecological debt, climate loss and damage, and the principles of climate justice. Learners are encouraged to connect local perspectives with global systems—investigating how innovation, technology, and nature-based solutions can contribute to just and sustainable transitions.

For teachers, the pathway offers scaffolded resources that align with the NCCA's vision for a student-centred, values-driven Senior Cycle. They support dialogue on sensitive but essential issues, including inequality, responsibility, and global citizenship, while providing practical tools for fostering research, collaboration, and critical thinking.

For students, Strand 3 is an invitation to think globally and act with agency—developing the knowledge, empathy, and confidence to imagine alternative futures and to participate in shaping more just, equitable, and sustainable worlds.

This pathway bridges curriculum and action, helping schools embed Strand 3 in ways that nurture critical awareness, responsibility, and hope, qualities that are vital for young people to thrive as ethical leaders in a globally interconnected world.

Week 10 S3.1.: Lesson 1: Introduction to Circular Design Thinking
Taken from our Future of Food Programme's Module 1, From Food Waste Food Gain, What is Circular Design Thinking helps Learners to stop taking, using, and wasting natural resources and materials. Using Circular Design Thinking methods, we can discover and create new ways to reuse, recycle, and regenerate important resources such as food.

Resources: Worksheet: Understanding Circularity Worksheet: Introduction to Circular Design

Week 12 - 15: Uses lessons from our Eco-Agency Youth-led Action programme. Future of the Ocean, Climate Change Engage that can be used to explore Strand 3, Global Connections See also Applied Learning Tasks Support for lessons to support and develop research skills 4.2.1

S3.2 Lesson 10: Eco Agency: Exploring What We CAN do - Introduction to Youth Leaders
Involving young people in research and evaluation results in valuable insights and fosters the growth and empowerment of youth participants. In this lesson learners will present their research on youth learners and change makers.

Resources: Worksheet: Action 2 Youth Leaders and Change Makers - Instructions

Lesson 11:Eco Agency: Youth Leader Case Study Presentation
In this lesson, learners will present their research and case study to their peers. Involving young people in research and evaluation not only results in valuable insights for both communities and individuals but it also fosters the growth and empowerment of youth participants.

Resources: Worksheet: Youth Leader Presentation Checklist, Teachers' Guide Youth Action presentation

S3.4 Lesson 2: Ocean Connection
In this lesson, learners are encouraged to use observation skills to understand the interconnections between the land and ocean interface and human and ocean interface and further understand our influence on the ocean.

Resources: Worksheet: Connecting to the ocean, Worksheet: Guided Observation, Worksheet: The Blue Mind- Ocean Connection

S3.4 Future of the Ocean Lesson 7: Local Coastal Pollution 2
In this lesson, learners will develop observational skills including data gathering and analysis SDG14 Future of the Ocean Micro-module 1: Introduction to Ocean Literacy SDG14 Introduction to Ocean Literacy around collected waste or open-source data online.

Resources include: Worksheet: Beach clean review & analysis

Week 13: S3.6 taken from our game design programme, Climate Change (CCE) see here for programme overview

Week 15 S3.6: CCE Lesson 4: Mitigation and adaptation
In this lesson, learners are introduced to the concepts of mitigation and adaptation, and identifying opportunities for learners to take climate action by looking at their own behaviour and how they might reduce their impact.

Resources include: Video: Climate action- part 1-mitigation, Video: Climate action- part 2- adaptation, Support: Climate Mitigation Chart, Support: Climate Game Themes

S3.8 and S3.9 lessons are taken from our Future of the Ocean, Offshore Renewable Energy and our game design programme, Climate Change (CCE) see here for programme overview

S3.8 FoO: Lesson 1: Introduction to Wind Energy and Sustainability
In this lesson, learners are introduced to renewable energy, focusing on wind power's environmental impact and advantages. By the end of the lesson, learners are primed with the foundational knowledge necessary to embark on an exploration of wind energy's intricacies and its broader implications.

Resources: Yes / No Worksheet

Lesson 2: Analyse Maps Related to Onshore Wind Farms
In this lesson, learners engage with interactive online maps displaying wind turbine generation capacity. This lesson fosters digital navigation, data interpretation, and analytical skills in understanding wind energy's geographical distribution and impact.

Resources: Onshore Wind Farms Worksheet, Teacher's Notes

Lesson 3: Exploring Offshore Wind Farms
In this lesson, learners virtually explore the world of wind energy through three videos. They begin with a tour of Arbuckle Wind Farm, gaining insight from the Operations Manager's drivethrough. After exploring a number of professions Learners craft 'day-in-the-life' diaries for construction workers, considering elements like weather, safety, turbine size, and the offshore environment.

Resources: Day-In-The-Life Worksheet

S3.9 CCE Lesson 9 Working with Nature: Nature-Based Solutions & Green Infrastructure 1
Adapting to climate change involves rethinking how we design the places where we live, work and play. This lesson introduces learners to the closely associated concepts of 'nature-based solutions' and 'green infrastructure'. Key terms related to these concepts are defined.

S3.9 CCE Lesson 10 Working with Nature: Nature-Based Solutions & Green Infrastructure 2
This lesson builds on Lesson 9 and deepens the learners' understanding of key concepts and terminology presented in lesson 9.

Resources: Flipped Classroom: Vocabulary Video: 'Nature-Based Solutions'

Week 17 S3.4 Evaluating Sources: The C.R.A.A.P Test
When conducting research, it is important to find quality information and avoid misinformation or "fake" information. Therefore, critically evaluating your sources is a necessary part of research.

Strand 3 Alignment Grid

Lesson	Strand 3 Focus	Linked Global Justice/Power Prompt
S3.1 Circular Design Thinking	Governance, economics, innovation	Which actor (government, industry, community) holds the most responsibility for making this circular idea scale, and why?
S3.2 Youth Leaders (10–11)	Global citizenship, civic agency, inequality	Choose at least one youth leader from a climate-vulnerable region. Who has power in their context? How does their work highlight loss & damage or ecological debt?
S3.4 Ocean Connection & Local Coastal Pollution 2	Transnational systems, ecological debt	Where does this pollution originate? Who benefits, and who pays the cost?
S3.6 CCE Lesson 4: Mitigation & Adaptation	Governance, economic forces, justice	Which options shift costs onto low-income groups or Global South communities? How could policy redesign address this?
S3.8 Offshore/Onshore Wind Lessons	Innovation, economic transitions, governance	Who are the key stakeholders in wind energy? How can benefits be shared fairly among communities, developers, and the state?
S3.9 CCE Lessons 9–10 (Nature-Based Solutions & Green Infrastructure)	Nature-based solutions, just transitions	If the same flood risk were managed with a seawall vs wetlands restoration, who gains and who loses, now and in 30 years?
C.R.A.A.P. Test (Evaluating Sources)	Futures literacy, governance, inequality	Whose interests are represented in this claim? Who funds it, and who might be excluded from the narrative?

Using the Resources:
If you wish to use these resources, we can offer an induction and online support throughout the module to help you plan integration into your projects and timetable. To register for this option, please contact us e:hello@futurefocus21c.com For more information on the resources please visit www.muinincatalyst.com

Setting up an online learning environment for the lessons on this module:
Our lessons integrate the use of virtual learning environments. To ensure seamless use of our lessons, a module should be setup on your school's virtual learning environment such as Teams, Google Classroom, etc. Learners are encouraged to upload documents to share with their peers. If your virtual learning environment does not support document sharing, we recommend OneDrive or Google Drive.

You can also use Google Sites or Microsoft Sway to encourage learners to present their work over the year - this can easily be set up to reflect the aims of TY and provide a showcase for their work as well as assessment tool.

Setting up a Canva Education account:
As our lessons integrate design, our lessons also refer to Canva. Educators and schools can open a free Canva for Education account by registering here: Canva for Education provides primary and secondary school teachers and students with premium features and templates. You can then also set up lessons and invite your learners to the class.

- Dr Anita McKeown, FRSA, FIPM, MEI - is an award-winning artist|scholar and STEAM educator, co-designing values-based leadership through education and community processes at the intersection of art, equitable placemaking, Open Source Culture and Technology (ethical and ecological implications). She is also a certified as a Earth Charter Education for Sustainable Development Educator; Inclusive Teaching and Learning Educator, Enterprise and Innovation educator, Trauma-informed practioner and VUCA world design

- Ms. Rebecca White: UCD - is an educator, consultant, trainer and curriculum developer, focusing on STEAM education, project-based, student-led learning and professional development for place-based learning. She is the Senior Learning Advisor for the Ocean Race and an Award-Winning Programme Developer

- External Expertise: We engage with external experts to bring contemporary and real-life knowledge to our resources. By working with these experts, we can ensure that our resources include future-focused learning and innovative ideas to expose learners to world-leading research in a digestible and accessible format. Learners are encouraged to critically think about and engage with knowledge and content in a learner-led and project-based manner.

For more information or to access online support in integrating the programme into your existing teaching please contact: hello@futurefocus21c.com

References and full programmes can be found here www.muinincatalyst.com/courses

Future of Food - From Food Waste to Food Gain

Research and Development Micro-Module 1: From Food Waste to Food Gain

Lesson 1: What is Circular Design Thinking?

Subjects: Art and Design, Agricultural Science, CPSE, Home Economics, SPHE

Lesson Title and Summary: What is Circular Design Thinking

Circular Design Thinking is an approach that helps us to stop taking, using, and wasting natural resources and materials. Using Circular Design Thinking methods, we can discover and create new ways to reuse, recycle, and regenerate important resources such as food.

This lesson will introduce learners to the key principles of Circular Design Thinking so that they can understand how to use the process in problem solving scenarios.

Vocabulary: Circular, Circularity, Design Thinking, Economy, Framework, Principle, Prototype, Research, Scenario, Sustainability, User

In this lesson, the learner will:

- Understand key circular concepts
- Be introduced to Circular Design Thinking
- Explore creative and strategic problem solving methods
- Work with peers to complete activities and practice collaboration
- Begin to adopt a circular mindset

Materials

- Worksheet: Understanding Circularity
- Worksheet: Introduction to Circular Design Thinking
- Internet access
- Markers, paper

Future of Food - From Food Waste to Food Gain

ACTIVITY INSTRUCTIONS

Activity 1 Understanding 'Circularity' (15 mins)

1. As a class, watch Video: Explaining the Circular Economy and How Society Can Re-Think Progress (3:48 mins).

2. Break into groups of 2 and complete the assigned worksheet: Understanding Circularity (10mins).

Activity 2 Introduction to Circular Design Thinking (35 mins)

1. As a class, review the Circular Design Thinking visualisation and read the definitions for each phase (Part 1). Discuss as a class (15mins). Questions and prompts to ask the learners might include:

a. Are there new terms or words that you haven't heard before?
b. What do you think a 'framework' is? Why would we use one?
c. What do you think design is? Do you have an example?

2. Break into groups of 2 and complete the assigned worksheet: Introduction to Circular Design (20mins)

3. At the last step on the worksheet, ask the groups to put their sheets up on the class wall or board and facilitate a short class discussion. Everyone should have a chance to ask questions or give feedback about the activity.

4. Learners should photograph their worksheets and upload the images to their personal portfolio on One Drive or the shared learning environment the school uses.

REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks.
- Two things they found most interesting and would like to explore more.
- One – their opinion they have about the tasks.

Future of Food - From Food Waste to Food Gain

EXTENSION / REDUCTION ACTIVITIES:

Reduction: For a shorter lesson, remove step 2 from activity 1. Alternatively, you could remove activity 1 entirely by providing a link to the video in advance so that the learners can watch it in their own time before class.

Extension: For a longer lesson, allow more time for the learners to complete activity 2. Encourage learners to write, draw and discuss as much as possible.

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

Video:

Explaining the Circular Economy and How Society Can Re-Think Progress [3:48min]
https://youtu.be/zCRKvDyyHml

SDG Goals:

SDG goal 12: Ensure sustainable consumption and production patterns
https://sdgs.un.org/goals/goal12

SDG goal 13: Take urgent action to combat climate change and its impact
https://sdgs.un.org/goals/goal13

SDG goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture
https://sdgs.un.org/goals/goal2

Circuléire: What is the Circular Economy?
https://circuleire.ie/the-circular-economy/#what-is-the-ce

LOCAL TRIP / EXPERTISE / ADDITIONAL WORK AND ASSESSMENTS

- Do you know any designers? Can you ask them about their work? Do they practice circular design thinking?
- Can you talk to someone involved in environmental studies or climate policy? How are they implementing ‘circular’ principles? Do they support a circular economy?

MM1: L1 WS UNDERSTANDING CIRCULARITY

Ellen McArthur Foundation, 2024

In one sentence, explain what “circular” means. Work together to write your own group definition.

_____

_____

_____

Why do you think circularity is important?

_____

_____

_____

List 3 problems where you think a circular approach could make things better?

1. _____

2. _____

3. _____

MM1:L1 WS INTRODUCTION TO CIRCULAR DESIGN THINKING

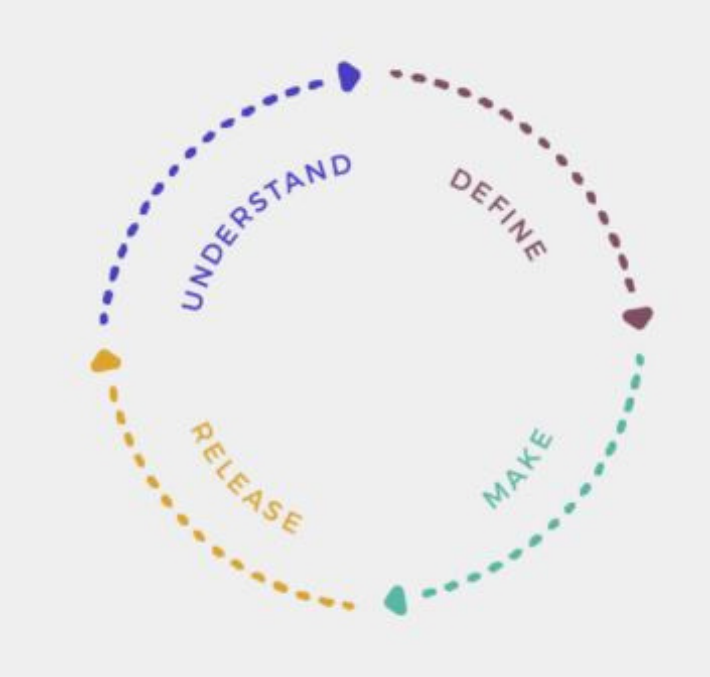

IMAGE SOURCE: Circular Design Guide by Ellen MacArthur Foundation and IDEO

1) Understand:
Learn about the problem or scenario through research. Understand who is involved, how nature is impacted, and what the key challenges are.

2) Define:
Create a point of view that is based on the insights gathered in the understand phase. What are the users' needs or environmental challenges?

3) Make:
Brainstorm lots of concepts in response to the needs and challenges identified. What are your core ideas and how can you show these? Consider drawing or making a simple paper prototype to demonstrate your ideas.

4) Release:
Share your ideas or prototype and get feedback so you can continue to iterate and improve the next version. What worked? What didn't work?

You will use this Circular Design Thinking framework as a guide throughout your project module. Each lesson will give you an opportunity to put each phase into action so you can understand, define, make, and release ideas to help combat food waste issues.

Before the next lesson, let's quickly explore some of the things you might already be thinking about. There is no right answer so don't worry if you don't know too much at this stage!

MM1:L1 WS INTRODUCTION TO CIRCULAR DESIGN THINKING

Understand: List 3 problems that you believe food waste creates:

1. _____

2. _____

3. _____

Define: Working together, choose 1 problem from your list and explain why we need to solve it:

_____

_____

_____

Make: Can you work together to come up with an idea that might solve this problem? Try sketching out the idea but remember to keep it simple!

Release: Put your sheets up on the class wall or board for everyone to see. Your teacher will facilitate a class discussion so everyone can have a chance to ask questions or give feedback about the activity.

NOTE: Practicing good time management will be very important during this activity.

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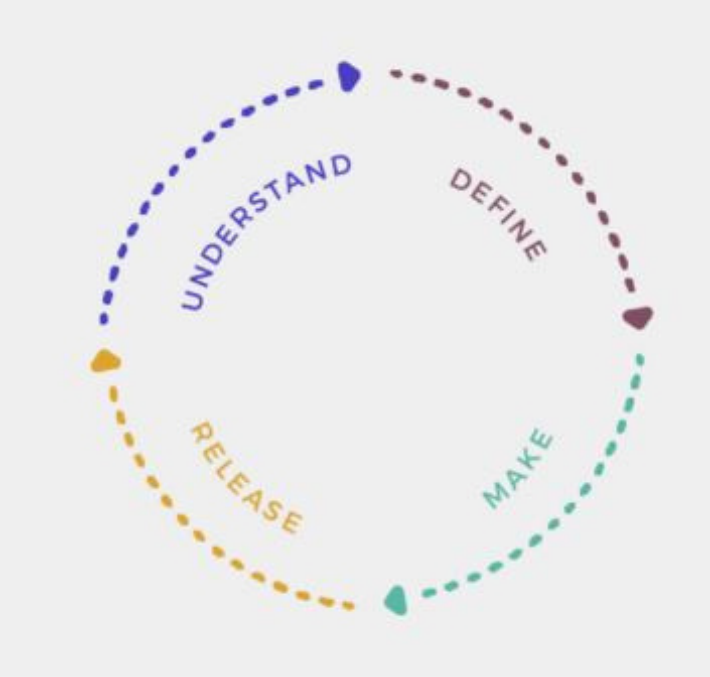

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SDG3 Eco-Agency: Supporting Youth-Led Climate Action

Standalone TY Unit

Lesson 10 : Youth Leaders and Change Makers

Subject Areas: Climate Action and Sustainable Development, CSPE, SPHE

Lesson Title and Summary: Youth Leaders and Changemakers

In this lesson, learners will consider the qualities of Youth Leadership and undertake a personal leadership audit. They will consider the areas in their lives where they take roles and responsibilities and identify their leadership qualities, such as initiative, responsibility, communication skills, and the ability to inspire and motivate their peers.

Developing choice and voice in causes learners believe in that align with their values and those of the UN Sustainable Development goals and the Earth Charter, can help build both personal and local resilience.

Vocabulary:

Connection, Eco therapy, Interconnected, Mandala, Mindfulness, Nature,

In this lesson, the learner will:

- Develop understanding of youth leadership
- Understand the roles and responsibilities of youth leadership
- Identify their own leadership skills
- Identify a youth leader that inspires them and share this with their peers through a presentation

Materials

- Worksheet: Youth Leaders and Change Makers - Instructions and Guide
- Teacher's notes: Youth Leaders and Change Makers Case study examples

SDG3 Eco-Agency: Supporting Youth-Led Climate Action
L10 : Youth Leaders and Change Makers

ACTIVITY INSTRUCTIONS

Activity 1 Youth Leadership Skills Audit (20 mins)

1. Ask learners to work in pairs, and refer them to the Worksheet: Leadership Skills Audit.
2. Learners will consider the qualities of leadership and undertake a personal leadership audit using their own experience. They will consider the areas in their lives where they take roles and responsibilities and identify their leadership qualities, such as initiative, responsibility, communication skills, and the ability to inspire and motivate their peers.
3. As they are working, project or recreate on the board, the Class Leadership Skills table
4. After 10 mins, ask the class to contribute to the collective 'Class leadership Skills' using the skills they have individually identified
1. Photograph the completed table and add to the classes learning digital learning environment e.g. Teams folder for the class.

Activity 2 Youth Leaders and Change Makers - 30 mins

1. Working in pairs, learners will begin to develop a short presentation on a Youth Leader that inspires them.
2. Ask learners to begin working through the Worksheet: Youth Leaders and Change Makers in preparation for their presentation.
3. Learners can use the internet to research Youth leaders example themes could be linked to the SDGs e.g. SDG2, Food Waste SDG3 - Teen Mental Health, SDG11 - Community Leadership, SDG14 - Ocean Conservation or they could focus on the Teacher's notes: Youth Leaders and Change Makers Case study examples to form a gallery of youth leadership
4. Learners will work through the worksheet and develop their presentations over a number of lessons as required.
5. This activity is also supported by Lesson 11, as the learners move from the research stage to the presentation stage.

REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks
- Two things they found most interesting and would like to explore more
- One – their opinion they have about the tasks

You can use Post-its or a mentimeter poll www.mentimeter.com to gather learners' reflections.

SDG3 Eco-Agency: Supporting Youth-Led Climate Action
L10 : Youth Leaders and Change Makers

REDUCTION / EXTENSION ACTIVITIES

Reduction: For a shorter class, complete only Activity 1 and watch one of the youth videos in the nedia box.

Option B: Undertake activity 2 only.

Extension: For a longer class, allow learners to begin research the youth leaders they might choose for their presentations.

Option B: Introduce the SDG Impact gallery project - see Local trip / Expertise / Additional Work and Assessment Boc. Share examples from Teacher's notes: Youth Leaders and Change Makers to consider some of the youth leaders and discuss what their impact is

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

Video: How to turn eco-anxiety into positive action. [32:52min].
https://www.bupa.co.uk/newsroom/ourviews/eco-anxiety

Video: Young Leadership principles - hope and expectations for the future [6:33 mIn]
https://www.youtube.com/watch?v=tBfu5yNHPk0

Video: Youth Leadership: Changing the World Through Service [10.37]
https://www.youtube.com/watch?v=SMS-QPw1DFY

Video: The Power of Youth - Changing the World [7:44 min] https://www.youtube.com/watch?v=zqwc1ik93_0

LOCAL TRIP / EXPERTISE / ADDITIONAL WORK AND ASSESSMENTS

Share the case study examples and have learners create an SDG Impact gallery. Use the examples and some of the learners' to create 17 posters for the school showing youth leadership and impact. Posters could follow a simple format for visual cohesion and serve as a focused activity for the Take 1 programme launched during Take 1 Week.

Take 1 Programme https://www.take1programme.com/ aims to support schools to communicate, raise awareness of, and embed Education for Sustainable Development as part of a broad curriculum, through the UN Sustainable Development Goals

L10TG Youth Leaders and Change Makers Examples

SDG2, Food Waste Abi Ramanan: Abi is the co-founder and CEO of ImpactVision, a software platform that uses machine learning to reduce food waste. She is also a co-chair at the World Economic Forum's upcoming Annual Meeting of the New Champions.

SDG3 - Teen Mental Health, Kwiri Yang: Kwiri is the founder and CEO of LifeGyde. The online platform is a space for young people to seek advice, guidance and support.

SDG 3, 10 - Paul Ndhlovu, Paul works as a radio champion at Zvandiri in Zimbabwe to help end poverty, ensure good health and wellbeing, and access to quality education for people living with HIV and AIDS.

SDG4 - Early years edutainment, Doreen Kessy: Doreen is COO of Ubongo, a multi-media educational platform in Africa. Using the power of entertainment and mass media, the company provides educational material at low cost and high volume and scale

SDG 5 - Gender Justice, Ronelle King: Ronelle from Barbados is a multi-award-winning Gender Justice Activist and the Founder of Life In Leggings, a Caribbean Alliance against gender-based violence. In 2016, Ronelle founded the viral "#LifeInLeggings" hashtag which was mobilized to create a safe space for women who had experienced sexual violence.

SDG11 - Sustainable Architecture, Basima Abdulrahman: Basima is an Iraqi structural engineer who is passionate about the environment. She founded Kesk, one of Iraq's first sustainable architecture consultancies, to build greener buildings in her homeland

SDG12 - Social Enterprise, Oana Toiu: Oana is the founder and general manager of Social Innovation Solutions, which offers training and consultancy in social innovation and entrepreneurship. Before that, she led the team that set up Mesteshukar BuitQ, a social enterprise focused on traditional Roma crafts and skills.

SDG13: Climate Advocacy, Eddy Frank Vásquez-Sánchez: Eddy, is a youth climate and oceans advocate from the Dominican Republic. In 2016, with other youth fellows, he created ''Juventud Sostenible'', a platform for youth advocacy to help achieve sustainable development and ensure that young people are actively included in the process.

SDG14 - Ocean Conservation, Finlay Pringle, Finlay is a 14-year-old Fridays4Future campaigner ocean enthusiast and shark ambassador from Ullapool, in N. Scotland.

SDG 5, 17: Heela Yoon; Heela, is the Founder of Afghan Youth Ambassadors for Peace Organization (AYAPO), a grassroots NGO working in the Eastern provinces of Afghanistan focusing on UN Security Council Resolution 1325 on Women, Peace and Security and Resolution 2250 on Youth, Peace and Security, as well as local peacebuilding.

L10WS:Youth Leaders and Change Makers - Instructions

Action 1 Youth Leaders and Change Makers - Instructions

Research some inspirational young people and their call to action and present a case study.

Case study (n.) A case study requires you to analyse and write about a person, a scenario or an organisation

1

STEP 1: IDENTIFY A YOUTH LEADER TO RESEARCH

2

STEP 2: THE RESEARCH STAGE - GATHER INFORMATION

3

STEP 3: PREPARE FINDINGS FOR PRESENTATION

Step 1
Choose a youth leader/ activist/advocate from your local or national community or someone from the international community and find out as much information as possible about your chosen leaders. What are questions you might ask them and the responses you think you might get?

Step 2:
Gather information using the question prompts and the themes and sources on the Flipped Classroom: Youth Leaders and Change Makers - Guide page. You may use the options or choose your own inspirational leader to research.

Step 3
Prepare your findings to present to peers in a 5-minute presentation, including time for a Q&A session. You have creative freedom as to how you will present your findings. Examples below:

Interactive:
Eg. A scavenger hunt you you create with guided clues that lead to key information which you will then elaborate on with further explanation of what you learned.

Artistic:
This could be a painting, a digital drawing, or sculpture. Ensure you verbally present your information to accompany your creation.

10WS:Youth Leaders and Change Makers - Instructions

3 GOOD HEALTH AND WELL-BEING

2

STEP 2: THE RESEARCH STAGE - GATHER INFORMATION

Question Prompts

1. Who is your choice of youth leader or change maker? Choose your own or from one of the three below.
2. What is their area of interest? What are they raising awareness of? advocating for?
3. What is their motivation and inspiration?
4. What is their objective?
5. What have they achieved to date?

WHAT?

Eco Action

WHO?

Example: Clover Hogan, 24-year-old climate activist and the founding Executive Director of Force of Nature - a youth non-profit mobilising mindsets for climate action.

3

STEP 3: PREPARE FINDINGS FOR PRESENTATION

L10WSb Leadership Skills Audit

Working in pairs, please give definitions for the following 5 words, you can use a dictionary and then rewrite them

Leadership

Delegation

Teamwork

Planning

Organisation

L10WSb Leadership Skills Audit

Working in pairs please discuss and organise the following skills in order of most essential to least essential for a leader to have.
Using a scale of 1 to 4 with 1 being the most essential and 4 being the least essential, number the following skills and give a reason for you decision

Delegation

Teamwork

Planning

Organisation

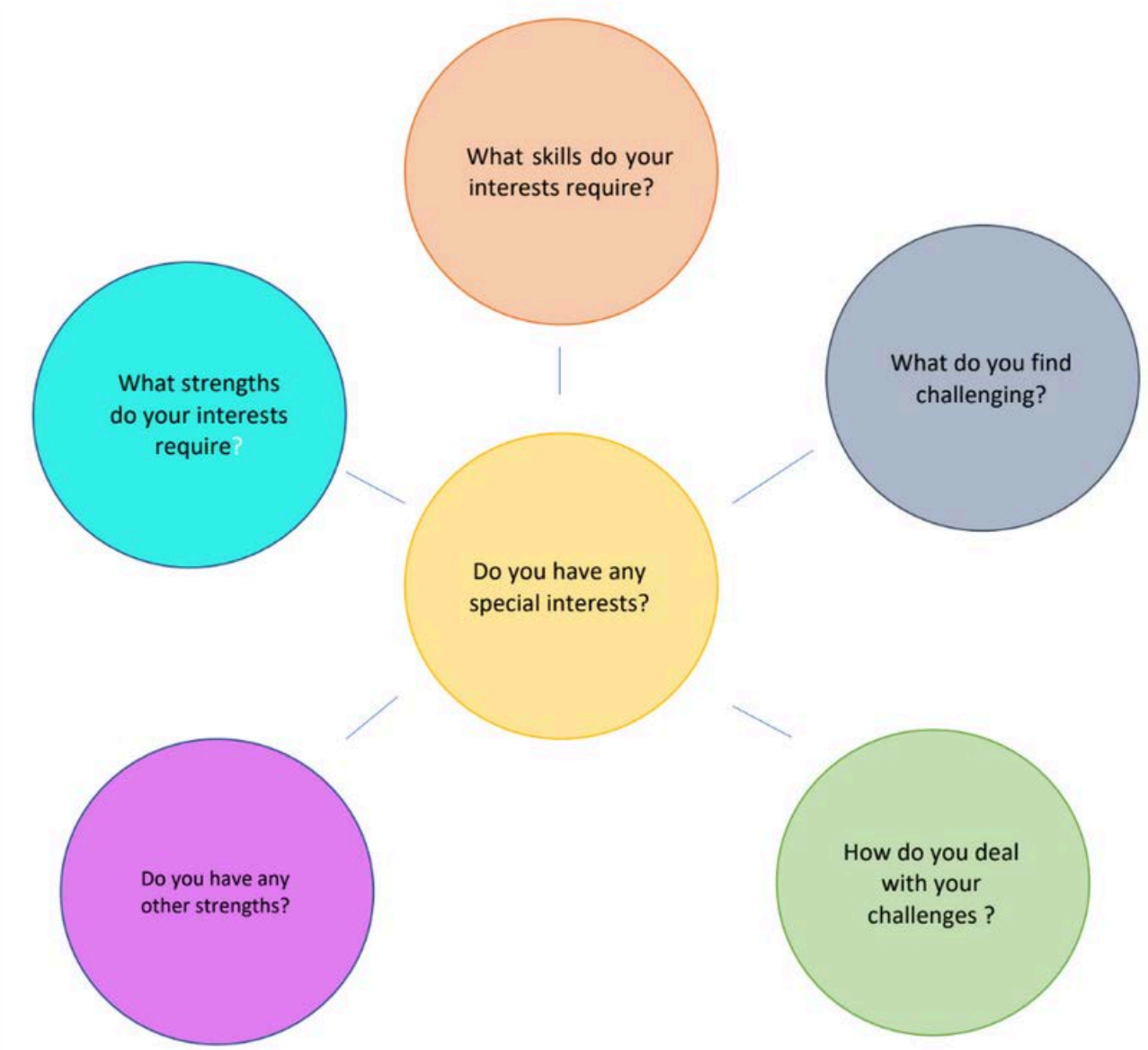
Communication

Finally are their any skills you would add?

Would they be more essential or important that the ones already listed?

L10WSb Leadership Skills Audit

Individually, consider the areas in your life where you take roles and responsibilities and identify your leadership qualities, such as initiative, responsibility, communication skills, and the ability to inspire and motivate your peers.



Use the Map of Me, starting with your hobbies / interests to get started and add all the skills invovled.

Think about how you might need to communicate with others, what you find difficult and how you overcome it, think about the leadership skills you have already defined - planning, delegation, organisation and team work to help you identify your own leadership skills in the activities you do.

SDG3 Eco-Agency: Supporting Youth-Led Climate Action

Standalone TY Unit

Lesson 11
Case Study Presentation

Subject Areas:
Climate Action and Sustainable Development, CSPE, SPHE

Lesson Title and Summary:
Case Study Presentation

In this lesson learners will present their research and case study to their peers. Involving young people in research and evaluation not only results in valuable insights for both communities and individuals, but it also fosters the growth and empowerment of youth participants.

It offers diverse perspectives and relevant insights, empowers youth and develops essential skills, encourages civic engagement and advocacy, promotes inclusivity and representation, shapes future leaders and improves research quality.

Vocabulary:

Influence, Youth Movement, Global Citizenship,

In this lesson, the learner will:

- Present research on youth leaders and change makers
- Develop diverse perspectives and relevant insights.
- Promote inclusivity and representation

Materials

- Worksheet: Youth Leader Presentation Checklist
- Teacher's Notes:

SDG3 Eco-Agency: Supporting Youth-Led Climate Action
L11: Case Study Presentation

ACTIVITY INSTRUCTIONS

Activity 1 Awareness and Space (5 mins)

1.Lead a 3-minute guided breathing exercise to help students centre their focus - See Teacher's notes

Activity 2 Presentations set up (35 mins)

1. Invite learners to form groups of 3 or four.
2. Explain that in their groups they will each present their findings from the previous lesson's research of youth leaders influencing change globally.
3. Remind groups that presentations had creative freedom therefore some might follow the standard means however others may be interactive or artistic.
4. Remind all learners that their presentations must clearly demonstrate the key presentation elements through what they created and what they say. (See Teacher's Notes for Key Presentation Elements).
4. Direct learners to Worksheet: Youth Movement - Presentation Checklist. Go through instructions. Ask open questions to check understanding.
5. Now set groups to task.

Activity 3 Presentation Debriefs (10 mins)

1. Write the word "takeaways" in the centre off the board.
2. Ask learners to prepare to share one takeaway from each presentation they witnessed.
4. Ask learners to nominate a speaker from each group and invite each speaker to come to the board and write summarised takeaways for their group.
5. Ask learners to revise their presentatoin with one more slide - what they want their audience to takeaway - see Local trip / Expertise / Additional Work and Assessments box

REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks
- Two things they found most interesting and would like to explore more
- One – their opinion they have about the tasks

Use Post-its or a mentimeter poll www.mentimeter.com to gather learners reflections

SDG3 Eco-Agency: Supporting Youth-Led Climate Action
L11: Case Study Presentation

REDUCTION / EXTENSION ACTIVITIES

Reduction: For a shorter class, focus on the presentation tasks for 30 minutes.

Extension: For a longer class, ask learners to undertake Force of Natures Changemaker Quiz - see media box

Opiton B: Learners can also explore Force of Nature's Digital Tool 'Hold This Space, to help them understand their emotions around climate which can also be a catalyst for change - see media box

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

Force of Nature's Changemaker quiz https://www.forceofnature.xyz/change-maker-quiz

Force of Nature's Hold this Space, Digital Tool https://holdthis.space/

Article: Seven Young Changemakers restoring the Earth, Internationale Klimaschutzinitiative (IKI). https://www.international-climate-initiative.com/en/iki-media/news/seven-young-changemakers-restoring-the-earth/

Article: Engaging youth in research planning, design and execution: Practical recommendations for researchers.

LOCAL TRIP / EXPERTISE / ADDITIONAL WORK AND ASSESSMENTS

- Ask learners to create an additional slide on their presentations - a takeaway slide - see teachers notes on what this should look like the information it should contain
- Ask learners to write a summary of their learning about youth activists and changemekers - their takeaways from lessons 10 and 11.
- Invite learners to continue their research into young people and their calls to action - What are young change makers advocating for and what are they inviting us to do? Learners could use this to write to TDs as well as create social media content to engage adult allies and contribute to policy change
- Learners can also contact their local Foiroge group to find out more about their Youth Leadership programme

L11 Teacher's Guide Activity 1 and 2 Support

Activity 1 3-Minute Guided Meditation

Begin by speaking in a calm and soothing voice. Ensure learners are sitting somewhere comfortable. Pause between each point.

- Find a comfortable and quiet place to sit or lie down. Close your eyes and take a few deep breaths, in through your nose, and out through your mouth. Let go of any tension or stress, allowing your body to relax.
- Now, as you continue to breathe deeply and slowly, I want you to imagine a warm, radiant light at the centre of your chest. This light represents your inner strength, your power, and your hope. With each inhale, imagine this light growing brighter and more vibrant. As you exhale, release any doubts or fears that may be holding you back.
- You are a unique and incredible individual with the potential to achieve anything you set your mind to. Feel that potential within you, like a fire burning brightly. It's your inner spark, your passion, your dreams. Now, let's take a moment to set a positive intention for this meditation. What is something you want to empower yourself with or feel hopeful about? Take a moment to think about it.
- Now, imagine this intention as a clear and vivid image in your mind. Visualise yourself achieving this goal, feeling the joy, confidence, and fulfilment it brings. See the path you need to take to make it happen, and know that you have the strength to overcome any obstacles.
- As you continue to breathe, remember that it's normal to face challenges and setbacks on your journey. But you have the power to overcome them. When faced with difficulties, imagine your inner light growing even brighter, as if it's radiating strength and resilience. You are like a warrior, strong and courageous.
- Now, let's focus on the present moment. Bring your attention to your breath. Inhale slowly for a count of four, and exhale for a count of four. Feel the sensation of your breath moving in and out of your body. With each breath, let go of any worries about the past or future. Be fully present in this moment.
- You are the author of your story, and every choice you make is a step toward your dreams. Each day is a new opportunity, a fresh start. Remember that you have the power to create your reality. You can choose hope over despair, confidence over doubt, and determination over fear.
- As we near the end of this meditation, take a moment to express gratitude for your unique qualities, your strengths, and your ability to choose hope. You are capable of achieving incredible things, and the world is full of possibilities.
- When you're ready, gently open your eyes and return to the present moment. Carry this sense of empowerment and hope with you throughout your day. Remember that you are a force to be reckoned with, and with the right mindset, you can achieve anything you set your heart on. Thank you for joining me in this mindfulness meditation.

Meditation - Bianca Peel, 2023

L11 Teacher's Guide Youth Action Presentation

Activity 2 Presentation

Key Presentation Elements - Learners must include all of these in their presentations. Learners may present in the traditional sense or they may have created an interactive experience or an artistic representation with accompanying narration.

- Who is the youth leader? Where they are from?
- What cause do they advocate or fight for?
- How did they get started in activism?
- Explain why you chose this person
- What specific issues are they interested in?
- What makes this person interesting to you?
- What did you know about them before you start?
- How has your knowledge developed since researching them?
- Suggest questions you you would like to ask this person
- While listening to presentations other learners complete the checklist on the next page.

Activity 3 Takeaways

1. Explain to Learners that a takeaway - is the the lesson or principle that one learns / 'takes away' from a story or event.
2. At the end of activity 3 - ask learners to revisit their presentations and create a 'takeaway' slide - showing the three key points they want their audience to leave with.
3. Ask learners to upload their final presentation to the shared drive

Takeaway Guide - put the following information on two slides to share with the learners to help them create their 'takeaway slide'

1. How do I know what to include as key takeaways?
2. To figure out what you should include in your key takeaways, you should ask yourself the following questions:
3. What will my audience care about?
4. What are the implications or "so what" of your presentation / youth leader?
5. What points have the biggest "impact"?

Takeaway slide design:

- Bold Font – Make sure that the font you use makes the "big ideas" even bigger
- Numbers – List the 'takeaways' numerically or add a number on their header slide
- Iconography – Use a symbol for the key takeaway that repeats through the sub points after you've introduced them.

L11WS Youth Action Presentation Checklist

Case Study Presentation Checklist

- Was it clear who the youth leader is and where they are from?
- Was the cause they advocate or fight for clear?
- Was how they got started in activism clearly explained?
- Did the speaker explain why they chose this person?
- Did the speaker identify the specific issues the youth leader is interested in ?
- Was what makes this youth leader interesting to the them expressed?
- Did the speaker discuss their prior and post knowledge?

Use the space below to make any notes about your 'takeaways' from each presentation. A 'takeaway' is the key message or important aspect to remember (take away) from the presentation. Each group will be asked to share these.

1

2

3

SDG14 Future of the Ocean
MM1: Introduction to Ocean Literacy

MM1: Introduction to Ocean Literacy

Research and Development

Lesson 2: Ocean Connection

Subject Areas: CSPE, Climate Action and Sustainability, Geography, Science, SPHE

Lesson Title and Summary: Ocean Connection

In this lesson, learners are encouraged to use observation skills to understand the interconnections between the land and ocean interface and human and ocean interface and further understand our influence on the ocean. Using inquiry-based learning techniques, the learners will become more ocean literate, as they understand the ocean network and the importance of knowing the interconnections between land and sea, and the ocean network.

This lesson includes a task to be undertaken at a local shoreline. If you do not live near the coast, please see Option B in the Extension Box.

Vocabulary: Connection, Interconnectedness, Ocean Literacy

In this lesson, the learner will:

- increase their ocean literacy skills
- develop observation skills through outdoor
- develop inquiry-based thinking skills
- develop critical-thinking skills
- share knowledge; learners will practice independent & group work

Materials

- Worksheet: Connecting to the ocean
- Worksheet: Guided Observation
- Worksheet: The Blue Mind - Ocean Connection
- Teacher's Guide: Connecting to the ocean
- Pen, pencil, colouring pens & paper
- Notebooks
- Post it notes

MM1: Introduction to Ocean Literacy
L2: Ocean Connection

Activity Instructions

This lesson includes a task to be undertaken at a local shoreline. If you do not live near the coast, complete the alternative task for Activity 2- see Extension Box.

Activity 1: Connecting to the Ocean (10 mins)

1. In small groups, use the following questions to further discussion on ocean literacy and begin to consolidate the idea of ocean connection. Share ideas as a whole class. Use Worksheet: Connecting to the Ocean.

- How is the ocean important to me? What is my personal connection to the ocean?
- How is the ocean important to my community? My country? The world?
- What is the best way to communicate the importance of the ocean to people our age?
- What decisions can I make today to be a better steward for our ocean?

Activity 2: Guided Observation (40 mins)

1. If you are a short walking distance to the ocean / seashore, take learners with Worksheet: Guided Observation and a pen / pencil. Ask learners to find a space to stand or sit on the shore and close their eyes:

- Observation 1: spend 30 seconds in silence- what can they hear, smell, feel?
- Observation 2: in the middle of the circle, draw or write what they observe right in close around them (2 minutes).
- Observation 3: around the middle of the circle, draw or write what they observe 5m around them (2 minutes).
- Observation 4: at the next stage of their circle, draw or write what they observe 20m around them (2 minutes).
- Observation 5: at the outer part of their circle, draw or write what they observe all around them, including the sky and land.

3. In pairs, share their observations.
4. Join pairs together to identify any interconnectedness in their observations and any issues.

REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks
- Two things they found most interesting and would like to explore more
- One opinion they have about the activities, what did they like or how they would improve them

Use Post-its or a Mentimeter survey - mentimeter.com to gather reflections

MM1: Introduction to Ocean Literacy
L2: Ocean Connection

EXTENSION / REDUCTION ACTIVITIES

Reduction: For a shorter class, complete Activity 1 and use the Option B task below.

Extension: For a longer class, extend the discussion time in Activity 1 and ask students to work in pairs to present interconnections discovered in the guided observation in Activity 2.

Option B: If your school is not close to a shoreline (replace Activity 2)

1. Complete a short Blue Mind mindfulness exercise.
2. Use Worksheet: The Blue Mind- Ocean Connection

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

Video: Fair Seas speaks with diver Michael O'Donnell about Marine Protected Areas in Ireland [1:01 mins] https://youtu.be/9a8jXHNNk0A?si=GGh88jokayFW3HGu

Video: The Ocean Connection | Official Trailer | Honnavara | Olive Ridley Sea Turtle [1:22 mins] https://youtu.be/n4DzQPL4D8I?si=9d94AcPR4v_dAZH0

Video: Blue Mind: Why the Ocean is Good For You [1:44 mins] https://youtu.be/0dgNVSV1qow?si=ObYuEdNgfWoX-dVv

Website: Orca Ireland https://orcaireland.org/meet-a-marine-biologist

Local Trip / Expertise / Additional Work and Assessments

Contact Orca Ireland see media box to arrange a ‘Meet with a Marine Biologist’ and either invite one to the school or arrange a virtual meet for an interview - see Media Communications 4: Audio for supporting materials on creating interview questions.

Visit a local marine awareness centre / aquarium or local beach with marine biologist.

If you are able to complete the guided observation activity, extend the guided observation task by completing it 2-3 more times over the month. Ask learners to note the patterns or changes in their observations.

MM1: L2 TG CONNECTING TO THE OCEAN

Connecting to the ocean
Activity 1

What do we get from the ocean? Why is it important to us? From vital nutrients to the blue economy and recreation, it has been shown that living on or near water can make you happier and healthier. The ocean has made the earth habitable – without the action of the ocean, life on this planet would not be possible. In fact, the three core requirements for human life are provided for by the ocean:

- oxygen to breathe
- freshwater to drink
- food to eat

Every second breath you take comes from the ocean. It's created by phytoplankton – tiny plants that float in the surface waters of our oceans – these bloom seasonally just like terrestrial plants when conditions are right and are the basis for most food webs in the ocean. These little guys are responsible for 50% of the world's oxygen – with seaweeds and other marine algae providing approx. another 25%.

The ocean also drives the water cycle – a process that provides us with freshwater through evaporation (where the surface water of the Earth heats up and turns to steam) , condensation (as the steam rises it forms clouds) and precipitation (rain). 97% of the water on Earth is seawater and over 70% of this planet is covered by the ocean which means without the ocean, freshwater would be in much shorter supply.

Take the Irish seaweed carrageen for example, this can be found in everyday products like your toothpaste, ice-cream, ketchup and peanut butter. Traditionally it was used as a treatment for coughs and colds. Seaweeds are used as a supplement that is fed to our top racehorses, soaked in our baths and added to our beauty products. Traditionally it was used as a fertilizer in our gardens, so many of our grandparent's cabbage would have had ocean nutrients in its DNA.

Learning just a little more about the ocean, becoming ocean literate, is the first place to start. The ocean really is the blue heart of our planet; studies have shown that just being beside the ocean makes us happier and healthier, reduces stress and anxiety and increases creativity and confidence. For all we get from our ocean, it deserves a little care from us!

MM1: L2WS CONNECTING TO THE OCEAN

Activity 1

In small groups, discuss the following questions. Nominate one person in the group to be the notetaker, who will record the main ideas of the discussion.

1. How is the ocean important to me? What is my personal connection to the ocean?
2. How is the ocean important to my community? My country? The world?
3. What is the best way to communicate the importance of the ocean to people our age?
4. What decisions can I make today to be a better steward for our ocean?

1

2

3

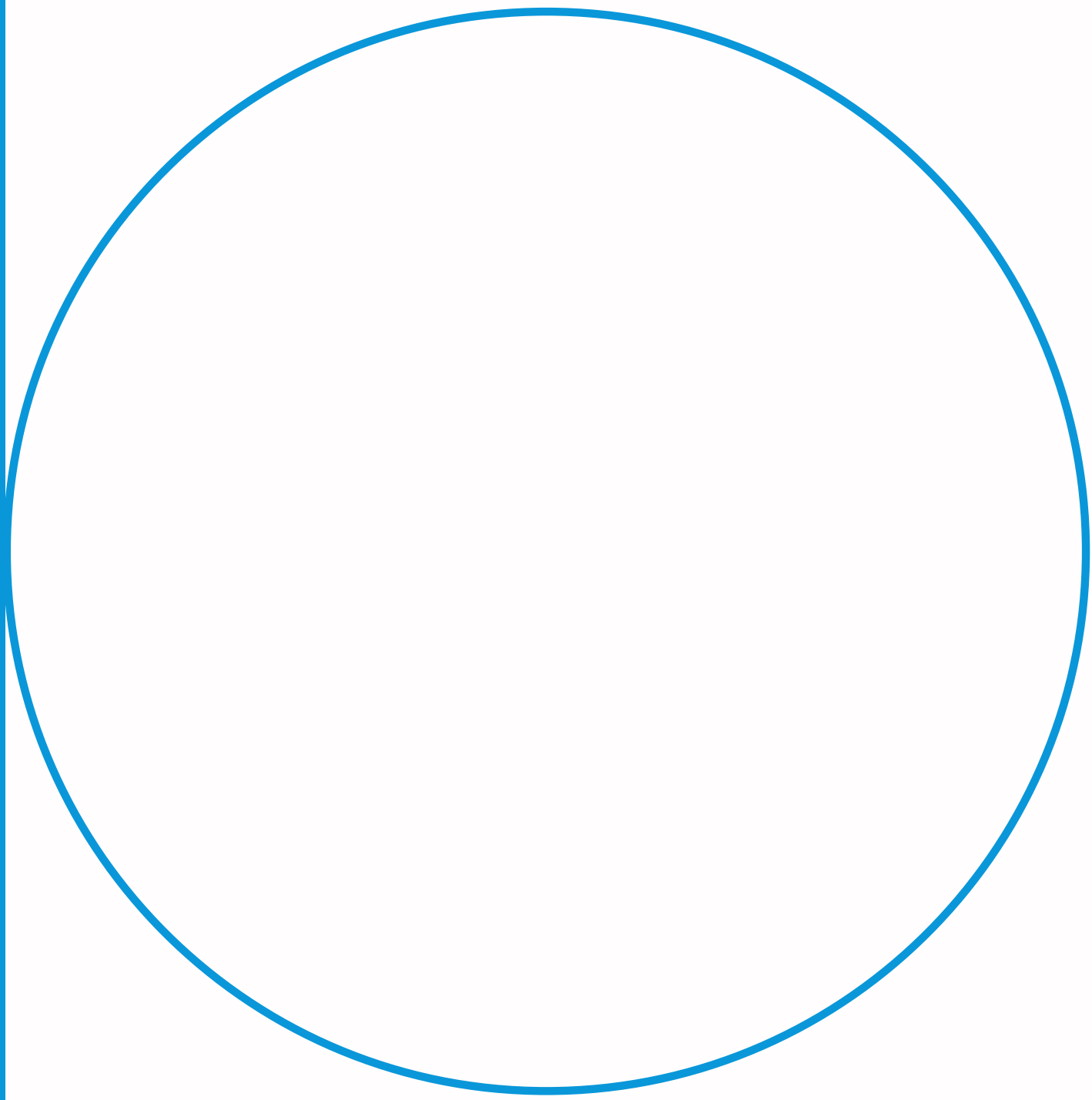
4

Nominate one person in the group to be the spokesperson. They will share the main ideas that the notetaker recorded during the discussion.

MM1: L2WS GUIDED OBSERVATION

Activity 2

Observation 1: what can you hear, smell, feel?
Observation 2: middle of the circle: what do you observe right next to you?
Observation 3: around the middle of the circle: what do you observe 5m around you?
Observation 4: at the next stage of the circle: what do you observe 20m around you?
Observation 5: at the outer part of their circle: what do you observe all around you, including the sky and land?



MM1: L2WS THE BLUE MIND- OCEAN CONNECTION

Discuss the following questions with a partner:

- What are your experiences with the ocean?
- Describe a memory you have with the ocean in it.
- Would you say you feel connected to the ocean? Why/why not?

How can we connect to the ocean?

1. Brainstorm with your partner how people who live far from the ocean could feel connected to it.
2. Select 2-3 ideas from your list. These ideas are the ones you are going to present to the class as ways of connecting to the ocean, even when you don't live near it.
3. Make notes on these key areas: xx, xx, xx. You can use the internet to help build your ideas.

Presenting ideas

1. Take it in turns to present your ideas on connecting to the ocean to the class.
2. While you are listening to the other pairs present, think of one question to ask them.
3. In between presentations, ask your questions.

SDG14 Future of the Ocean
MM1: Introduction to Ocean Literacy

MM1: Introduction to Ocean Literacy

Research and Development

Lesson 7: Local Coastal Pollution 2

Subject Areas: CSPE, Climate Action and Sustainability, Geography, Science, SPHE

Lesson Title and Summary: Local Coastal Pollution 2

This is a linked lesson with Lesson 6 Local Coastal Pollution 2. If you didn't complete a beach clean in Lesson 6, please move on to Lesson 8.

In this lesson, learners will further develop their awareness of the impact of pollution on the ocean and take action to help restore ocean health locally. The learners' first hand experience will be used to develop observational skills including data gathering and analysis.

Vocabulary: Data, Non-Recyclable, Observation, Ocean Literacy, Recyclable

In this lesson, the learner will:

- increase their ocean literacy skills
- increase understanding of humans influence on nature and the ocean
- work collaboratively
- participate in citizen science
- practice independent & group work
- develop skills of data analysis
- develop mindful reflection skills

Materials

- Worksheet: Beach clean review & analysis
- Supporting resource: Observation cards (completed in Lesson 6)
- Collated rubbish (from Lesson 6 beach clean)
- Gloves
- Large containers x 4 (equal size and weight)
- Measuring scales
- Large sheet or newspapers

MM1: Introduction to Ocean Literacy
L7: Local Coastal Pollution 2

Activity Instructions

Activity 1: Beach Clean Review (10 mins)

1. Using the observation cards from Lesson 6 and Worksheet: Beach clean review analysis, ask students to work with another pair to compare what was found during the beach clean. Using the following prompts to aid analysis.

- Did you find similar items during the clean? What was the most common item?
- How many recyclable items were found? Non-recyclable?
- What was the strangest item you found? How do you think it ended up on the beach?
- Do you think these items would be found on most beaches in the local area? Why/why not?

Activity 2: Analysing local coastal pollution (40 mins)

This activity is best done in an open space, outdoors.

1. Ask learners to form groups of 2-3 and give each groups gloves and Worksheet: Beach clean review & analysis.
2. Set up the containers as 'Recyclable', 'Non-Recyclable', 'Organic', 'Other/Unknown'
3. Distribute the rubbish bags equally among the groups and ask them to sort the trash into the relevant containers. Use the large sheet/newspapers for groups to dump their rubbish onto. Discuss reasons for putting items in the 'Other/Unknown' container.
4. Once the trash is sorted, weigh each container separately to assess how much of each material was collected from the beach. Which category weighed heaviest?
5. Add values together to get a total weight for all the items collected. Is this more or less than expected?
6. Calculate what percent is non-recyclable, recyclable, organic and other/unknown by dividing the weight of each by the total weight then multiplying by 100.
   Example: 5kg of recyclable items / 20kg total = 0.25, 0.25 x 100 = 25% of the trash collected is recyclable.
7. Discuss the results and implications

- What is the highest percentage? What could be the reasons for this?
- Are the recyclable items truly recyclable? Why/why not?
- What surprises you about the analysis of trash?
- What impact might this trash have had on the animals and the environment?
- What ways can we prevent this trash from reaching the beach?

REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks
- Two things they found most interesting and would like to explore more
- One opinion they have about the activities, what did they like or how they would improve them

Use Post-its or a Mentimeter survey - mentimeter.com to gather reflections

MM1: Introduction to Ocean Literacy
L7: Local Coastal Pollution 2

EXTENSION / REDUCTION ACTIVITIES

Reduction: For a shorter class, complete Activity 2 only.

Extension: For a longer class, investigate which online citizen science projects the data could be uploaded to. Create visual representations of the analysis. Complete a second beach clean at a different local shoreline and redo the analysis, comparing the data.

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

Article: Recyled Plastic Projects https://www.afar.com/magazine/save-oceans-as-you-shop-10-sustainable-products-made-from-recycled-waste

Website: Clean Coasts https://cleancoasts.org/

Website: The Ocean Cleanup - https://theoceancleanup.com/

App: Litterati (building the most powerful crowd-sourced set of data on litter ever assembled) https://www.litterati.org

Design Requirements for Ireland's National Single Use Plastic Policy https://www.gov.ie/en/publication/ef24a-single-use-plastics/#design-requirements

World Economic Forum, Plastic Packaging Problem: 5 Innovative Ideas for https://www.weforum.org/agenda/2019/10/plastic-packaging-environment-design-loop/

Local Trip / Expertise / Additional Work and Assessments

Create a running data collation project on the trash collected during local beach cleans. Use the Media Communications programme to work with learners on presenting their findings.

Set up a presentation night or exhibition for the local community to hear about local ocean and coastal pollution. Work with a local marine awareness centre / tidy towns group to organise regular beach cleans.

Contact / Invite local authority Environment or Climate Change officer to discuss Single Use Plastic Policy within the local context. This could become the source of a media output using MM7 Media Communication Module:

MM1: L7WS BEACH CLEAN REVIEW & ANALYSIS

Activity 1 Beach Clean Review

1. Find a partner.
2. Using your observation cards from the beach clean, compare what was found.
3. Discuss the following questions:

- Did you find similar items during the clean? What was the most common item?
- How many recyclable items were found? Non-recyclable?
- What was the strangest item you found? How do you think it ended up on the beach?
- Do you think these items would be found on most beaches in the local area? Why/why not?

Activity 2: Analysing local coastal pollution

1. Form groups of 2-3.
2. Sort rubbish into the containers- ‘Recyclable’, ‘Non-Recyclable’, ‘Organic’, ‘Other/Unknown’.
3. For the items that were put in the ‘Other/Unknown’ container, discuss why you selected that category.

How much does each container weigh?

Recyclable: _____ Non-Recyclable: _____

Organic: _____ Other/Unknown: _____

Circle the heaviest category.

What is the total weight of the four categories? _____
Is this more or less than you expected? Why?

Calculate what percent is non-recyclable, recyclable, organic and other/unknown by dividing the weight of each by the total weight then multiplying by 100.
Example: 5kg of recyclable items / 20kg total = 0.25, 0.25 x 100 = 25% of the trash collected is
recyclable.

Discuss the results and implications

- What is the highest percentage? What could be the reasons for this?
- Are the recyclable items truly recyclable? Why/why not?
- What surprises you about the analysis of trash?
- What impact might this trash have had on the animals and the environment?
- What ways can we prevent this trash from reaching the beach?

SDG13 Climate Change Engage Game Design

SDG13 Climate Change Engage Game Design

Lesson 4: Climate Action

Subjects: Design, Environmental Science, Game Design, Geography, Science, Technology

Lesson Title and Summary: Climate Action

In this lesson, learners are introduced to the concepts of mitigation and adaptation, as well as encouraging them to take climate action, by looking at their own behaviour and how they might reduce their impact.

Learners will explore local and global impacts and actions around greenhouse gas and energy reduction, expanding their knowledge for potential themes in their game design.

Vocabulary: Climate Action; Climate Change Adaptation; Climate Change Mitigation; Carbon Dioxide (CO_2); Methane (CH_4)

In this lesson, the learner will:

- Understand the difference between climate change mitigation and adaptation
- Understand what they can do to cut greenhouse gas emissions
- Understand how we can live in a changed climate and adapt to it
- Be empowered to take positive action for the climate

Materials

- Video: 'Climate action- part 1-mitigation'
- Video: 'Climate action- part 2-adaptation'
- Support: Lesson 2-4 Teachers' Guide
- Support: Climate Mitigation Chart
- Internet access
- Pens, pencils
- paper
- Blackboard / Whiteboard

SDG13 Climate Change Engage Game Design
L4: Climate Action

Activity Instructions

Activity 1 Climate mitigation: how can we cut greenhouse gas emissions? (25 mins).

1. Elicit possible definitions of climate change mitigation. Allow learners to refer to dictionaries to gather 2 - 3 definitions and share ideas with a partner.
2. Elicit ideas as a whole class to create a definition together.
3. Reintroduce the concept of Greenhouse Gases, Carbon Dioxide (CO_2) / Methane (CH_4) emissions and the areas where CO_2 / CH_4 are produced:

    - burning wood or fossil fuels, like oil, coal and gas
    - heating our homes
    - transport and energy systems
    - livestock agriculture's digestion producing methane

   and discuss - refer to support: 'Lesson 2-4 Teachers' Guide' for additional support if required.

5. Watch video 'Climate action- part 1- mitigation' (4:46 mins): ask learners to list the activities mentioned that use energy.
6. Divide learners into pairs, ask them to write a list describing the activities that they carry out during the day e.g. taking a shower, washing clothes, eating breakfast, going to school, etc.
7. Ask them to compare their list with the list they made from the video and discuss how less energy could be used by them personally, the local community, and the country.
8. Use the Climate Mitigation Chart to consider what they already do and what are the obstacles to things they don't do. Compare with another pair.

Activity 2: Adaptation (25 mins)

1. Elicit possible definitions of climate change adaptation. Allow learners to refer to dictionaries to gather 2 - 3 definitions and share ideas with a partner.
2. Elicit ideas as a whole class to create a definition together. Introduce the concept of climate change adaptation - see support: 'Lesson 2-4 Teacher's Notes'.
3. Working in the same pairs as Activity 1, look up how much the sea level has already risen (in Ireland/ in the world) - see Media Box.
4. Discuss the following questions as a whole class or in small groups:

    - Have you seen any coastal erosion?
    - Have you seen any flooding?
    - Are you aware of any houses or roads that were built close to the coast/ in flood plains?

SDG13 Climate Change Engage Game Design
L4: Climate Action

REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks
- Two things they found most interesting and would like to explore more
- One opinion they have about the activities, what did they like or how they would improve them

Use Post-its or a mentimeter survey - www.mentimeter.com to gather reflections

EXTENSION / REDUCTION ACTIVITIES

Reduction: For a shorter lesson, reduce the amount of time spent on Activity 1.

Extension: For a longer lesson, share the case studies on seagrass or salt marsh / dune system with the learners and discuss if they would rather have a sea wall to prevent coastal erosion or plant seagrass / create a salt marsh/dune system?

Option B: Consider the adaptations outlined in the support: 'Climate Game Themes' for their potential for integration into their game design

Option C: Calculate their carbon footprint: https://www.carbonfootprint.com/calculator.aspx

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

Activity 1 Video: 'Climate action- part 1-mitigation' (4:46 mins) https://youtu.be/ptV2xXiDXAc

Activity 2 Video: 'Climate action- part 2-adaptation' (2:37 mins) https://youtu.be/eoY7N7QKI_o

Climate Change Post (2022) https://www.climatechangepost.com/ireland/

Coastal Floods in Ireland https://www.climatechangepost.com/ireland/coastal-floods/

Coastal Risk Screening Tool https://coastal.climatecentral.org/

History of CO2 concentration animation https://gml.noaa.gov/ccgg/trends/history.html

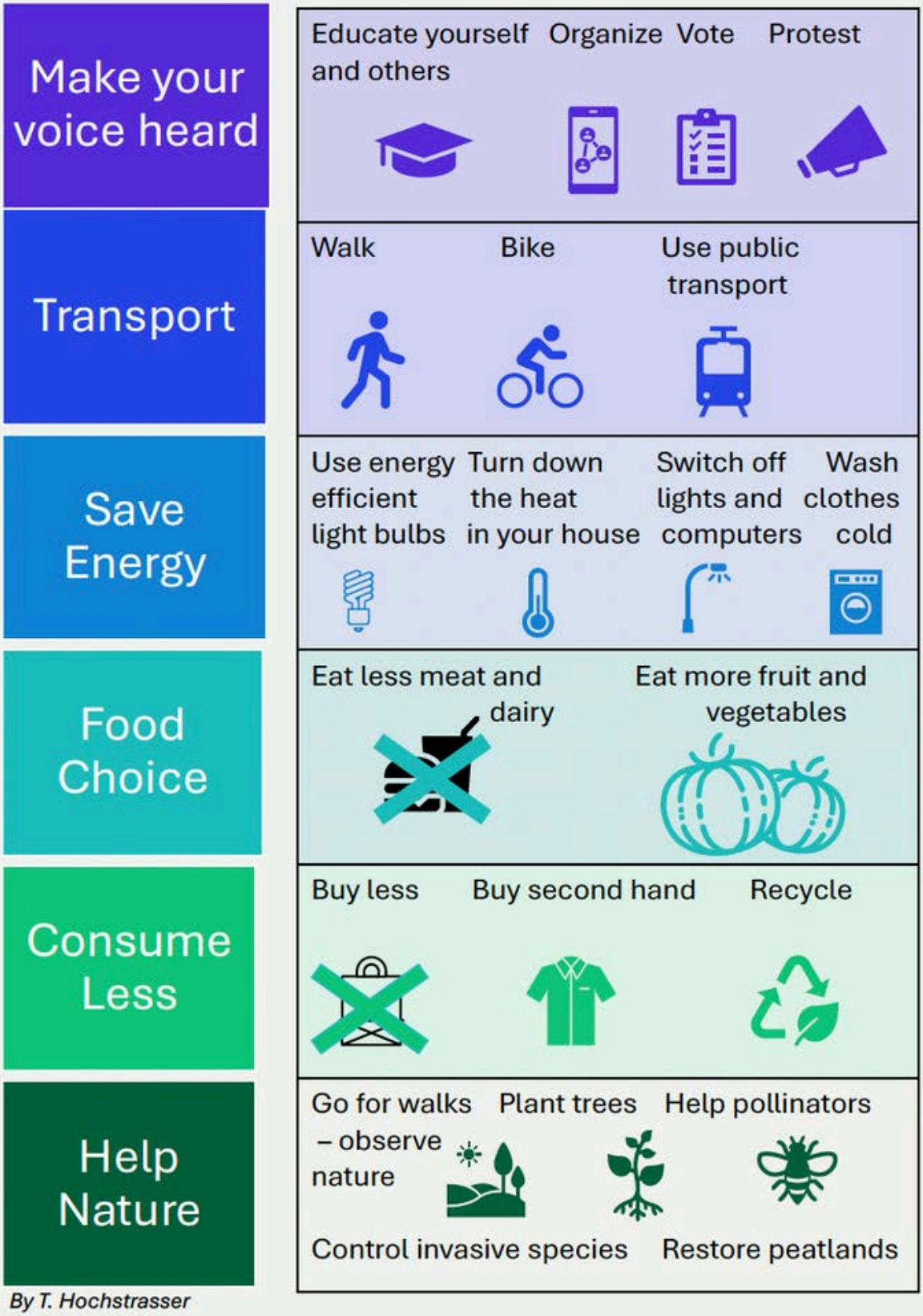
Local Trip / Expertise / Additional Work and Assessments

Contact a planner from the local or information on their climate change mitigation and adaptation projects.
Contact any local engineering companies to find out more about any climate change mitigation and adaptation projects.

CCE L4WS: CLIMATE MITIGATION CHART SUPPORT

13 CLIMATE ACTION

How to cut greenhouse gas emissions?
Climate change mitigation



By T. Hochstrasser

SDG14 Future of the Ocean
MM3: Offshore Renewable Energy

Micro-Module 3: Offshore Renewable Energy

Research and Development

Lesson 1: Introduction to Wind Energy and Sustainability

Subjects: Climate Action and Sustainable Development, Design, English, Engineering Science

Lesson Title and Summary: Introduction to Wind Energy and Sustainability

This lesson plan introduces learners to renewable energy, focusing on wind power's environmental impact and advantages. Engaging questions prompt critical thinking about fossil fuels' consequences, wind energy's role in sustainability, and its potential to enhance air quality and energy independence. Learners reflect on their roles in sustainable practices and technological advancements for reliable wind energy. They explore the visual and economic aspects of wind farms, culminating in envisioning a renewable-powered community. By the end of the lesson, learners are primed with the foundational knowledge necessary to embark on an exploration of wind energy's intricacies and its broader implications.

Vocabulary: Renewable energy, Wind Power, Sustainability, Energy Independence, Environmental Impact

In this lesson, the learner will:

- Explore the significance of renewable energy, particularly wind power, and its positive effects on the environment.
- Engage in thought-provoking discussions about the drawbacks of fossil fuels, the potential of wind energy, and their role in promoting sustainable practices.
- Develop critical thinking skills by considering technological advancements to enhance the reliability of wind power and balancing aesthetic and ecological concerns.

Materials

- Paper, pens
- Supporting Resource: Yes / No

MM3: Offshore Renewable Energy
L1 Introduction to Wind Energy and Sustainability

ACTIVITY INSTRUCTIONS

Activity 1: Introduction (10 minutes)

1. Invite learners to watch this National Geographic video [link 3:16mins] on Renewable Energy 101.
2. Invite learners to brainstorm the following questions:
    a. What is renewable energy?
    b. Why do they think renewable energy is important?
    c. What impact does it have on the environment?

Activity 2: Walking Debate (40mins)

1. Place a 'YES' sign at one end of the room and a 'NO' sign at the other end.
2. Read out the following questions and have learners show whether they agree with the statement by standing under the appropriate signs.
3. Ask some people to explain why they chose a particular answer and give people the freedom to change sides if they are convinced by other people's arguments.
4. Allow some time for discussion between each question.

    a. Do fossil fuels impact the environment and contribute to climate change?
    b. Are there advantages to using renewable energy sources?
    c. Do you think it's possible for all our energy needs to be covered by renewable energy sources? (or will we always need to rely on some fossil fuels?)
    d. Do you think it's possible for the world to achieve 'energy independence'?
    e. Could the use of wind turbines help reduce air pollution and improve air quality?
    f. Do you think wind energy can be unpredictable?
    g. Is there a role for young people in promoting sustainable energy practices and influencing future energy policies?
    h. Are wind turbines beautiful? Do they look well in the natural landscape?
    i. Will wind turbines help us save money? Will they create jobs for communities?

REFLECTIVE EXERCISE: 3-2-1

- Three things they feel they have learnt from the exercise
- Two things they found most interesting and would like to explore more
- One – their opinion they have about the site / exercises

Use Post-its or a Mentimeter survey - mentimeter.com to gather reflections

MM3: Offshore Renewable Energy
L1 Introduction to Wind Energy and Sustainability

EXTENSION / REDUCTION ACTIVITIES:

Reduction: For a shorter class, skip thought questions in Activity 2: Depending on time constraints, omit a few thought questions while ensuring coverage of critical aspects like environmental impact, benefits, and challenges.

Extension: For a longer class, prompt learners to create a glossary by looking up the meaning of the following words:

- climate change,
- energy crisis,
- clean energy generation,
- reduction of carbon emissions,
- renewable energy,
- wind turbine,
- carbon neutral.

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

National Geographic video on Renewable Energy 101 [3:16mins]
https://www.youtube.com/watch?v=1kUE0BZtTRc&ab_channel=NationalGeographic

Website: Sustainable Energy Authority of Ireland: https://www.seai.ie/

Website: Government Energy website on advantages and challenge of wind energy:
https://www.energy.gov/eere/wind/advantages-and-challenges-wind-energy

Local Trip / Expertise / Additional Work and Assessments

Find out if there is any offshore wind energy in your county? If not, find out if there is any offshore-wind around Ireland?

Does anyone in your community have an onshore wind turbine? Perhaps a local farmer might? If so, ask them why they chose wind energy over other renewable energy sources?

Interview older members of your community about windmills.

MM3: L1 WS YES / NO

YES / NO

YES

MM3: L1 WS YES / NO

YES / NO

NO

SDG14 Future of the Ocean
MM3: Offshore Renewable Energy

Micro-Module 3: Offshore Renewable Energy

Research and Development

Lesson 2: Analyze Maps Related to Onshore Wind Farms

Subjects: Climate Action and Sustainable Development, Design, English, Engineering Science

Lesson Title and Summary: Analyze Maps Related to Onshore Wind Farms

In this lesson, learners engage with interactive online maps displaying wind turbine generation capacity. The introduction outlines objectives—note-taking, record-keeping, and data analysis. Learners are divided into small groups with devices or utilize a shared display. They explore maps on Eirgrid and Wind Energy Ireland websites, noting wind farm details, locations, and toggling different generation types. Data analysis involves note-taking, producing graphs to highlight trends like yearly wind farm commissioning, and calculating energy production per county or province. This lesson fosters digital navigation, data interpretation, and analytical skills in understanding wind energy's geographical distribution and impact.

Vocabulary: Interactive Maps, Data Analysis, Geographic Distribution, Onshore Wind

In this lesson, the learner will:

- Explore interactive wind energy maps online.
- Analyze and interpret data from wind farm maps.
- Create visual representations like bar charts to showcase trends.
- Develop skills in note-taking, record-keeping, and digital navigation.

Materials

- Worksheet: Onshore Wind Farms
- Teacher‘s Notes
- Internet access
- Notepad and pen, or word-processor on laptop
- Calculator

MM3: Offshore Renewable Energy
L2 Analyse Maps Related to Onshore Wind Farms

ACTIVITY INSTRUCTIONS

Activity 1: Introduction (5 minutes)

1. Explain to learners that there are online interactive maps showing the wind turbine generation capacity.
2. Explain to learners that they are going to visit the websites containing these maps and explore the information they contain.
3. Highlight the key objectives of the lesson: note taking, record keeping, and data analysis.

Activity 2: Set-up online (5 minutes)

1. Depending on the number of resources (iPads/ laptops/ computers etc) and the number of learners, divide the class into small groups. If there is only one device in the classroom, consider projecting it onto the whiteboard/ wall for the entire class to follow.

Activity 3: Visit the websites and answer Questions on Worksheet 4 (20 minutes)

1. Invite learners to navigate to the map on Eigrid's website. Learners can explore the number of wind farms, and their names and locations via the map. They can also toggle-on and -off the wind-farms with other types of generation.
2. Invite learners to navigate to the map on Wind Energy Ireland's website. Additional information on this map includes the energy capacity of the wind farm, and the year it was commissioned.
3. Have learners answer the questions on Worksheet: Onshore Wind Farms.

Activity 4: Present the findings (20mins)

1. Invite learners to present their findings to the class and to highlight the top three most interesting things they found.

REFLECTIVE EXERCISE: 3-2-1

- Three things they feel they have learnt from the exercise
- Two things they found most interesting and would like to explore more
- One – their opinion they have about the site / exercises

Use Post-its or a Mentimeter survey - mentimeter.com to gather reflections

MM3: Offshore Renewable Energy
L2 Analyse Maps Related to Onshore Wind Farms

EXTENSION / REDUCTION ACTIVITIES:

Reduction: For a shorter class, answer only questions 1-7 on the worksheet or reduce the time for class discussion of their results.

Extension: For a longer class, invite learners to create a poster of their findings to the questions in the worksheet.

See Media Communications 3: Research - this micro module supports a learners micro-project to share their research findings. The micro-module supports learners who may consider taking Leaving Certificate Design and Communications Graphics as well as providing transferable skills in visual communication methods.

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

Website: Wind farm maps on Eirgrid website: https://www.smartgriddashboard.com/#all/transmission-map

Website: Wind farm maps on Wind Energy Ireland Website: https://www.windenergyireland.com/about-wind/interactve-map

Local Trip / Expertise / Additional Work and Assessments

Organise a visit to Eirgrid's National Control Centre. It is the nerve-center of the country's entire electricity grid, and its where the Engineers work to make sure the lights stay on in everyone's homes.

Organise a talk with a local electrical engineer or electrician who can talk more about how we connect wind farms to the electricity network. Develop some interview questions to ask them.

Encourage and support learners to undertake the SEAI One Good Idea competition - https://www.seai.ie/blog/one-good-idea/

MM3: L2 TG OFFSHORE WIND FARMS

TEACHER'S NOTES

Online interactive maps

There are online interactive maps showing the location and size (in electrical terms) of the On-land (aka onshore) wind farms in Ireland. Wind farm (electrical) size is typically measured in MegaWatts (MW). Typically household appliances use KiloWatts (KW). A kilowatt is 1000 Watts and a Megawatt is a 1,000,000 Watts.

The figures below are screenshots taken of the maps on the Eirgrid website and the Wind Energy Ireland Website. The maps should be identical – depending on how well they are updated by the respective authors – but the level of detail provided for each wind farm is different on both sites.

MM3: L2 WS OFFSHORE WIND FARMS

OFFSHORE WIND FARMS

Answer the following questions based on information you can find on Eirgrid's website and Wind Energy Ireland's website:

Website: Wind farm maps on Eirgrid website:
https://www.smartgriddashboard.com/#all/transmission-map

Website: Wind farm maps on Wind Energy Ireland Website:
https://www.windenergyireland.com/about-wind/interactve-map

1. How many wind farms are in Ireland?

_____

2. Where are they mostly located?

_____

_____

_____

3. Name 5 different wind farms; why do you think they were named that?
   1. _____
   2. _____
   3. _____
   4. _____
   5. _____

4. What other types of renewable energy do you see on the map?

_____

_____

_____

5. Which wind farm has the largest energy capacity, and what is that capacity?

_____

_____

_____

6. What is the wind farm with the least amount of energy capacity; what is that capacity?

_____

_____

_____

MM3: L2 WS OFFSHORE WIND FARMS

OFFSHORE WIND FARMS

7. Why do you think there are such differences in capacity?

8. Which year had the most new wind farms constructed?

9. When was the first turbine constructed?

10. Try and produce a bar chart showing the number of new wind farms commissioned each year – which will show an interesting trend. What is that trend?

11. Calculate the amount of energy produced in each county or each province by adding the amounts quoted in the maps for each individual wind farm.

SDG14 Future of the Ocean
MM3: Offshore Renewable Energy

Micro-Module 3: Offshore Renewable Energy

Research and Development

Lesson 3: Exploring Offshore Wind Farms

Subjects: Climate Action and Sustainable Development, Design, English, Engineering Science

Lesson Title and Summary: Exploring Offshore Wind Farms

In this engaging lesson, learners virtually explore the world of wind energy through three videos. They begin with a tour of Arbuckle Wind Farm, gaining insight from the Operations Manager's drive-through. Next, they visit Hornsea Wind Farm, the world's largest offshore wind farm, with a 360° tour led by a wind turbine technician. Then, they explore Burbo Bank Offshore Wind Farm in the UK. Following the videos, learners brainstorm the diverse roles in wind farm development. Finally, they craft 'day-in-the-life' diaries for construction workers, considering elements like weather, safety, turbine size, and the offshore environment.

Vocabulary: Wind Energy, Virtual Tour, Roles and Jobs, Construction Worker Diary

In this lesson, the learner will:

- Explore virtual tours of real-world wind farms, including Arbuckle, Hornsea, and Burbo Bank, gaining insights into their operations and significance.
- Identify and discuss various roles and jobs involved in the design, construction, and maintenance of both onshore and offshore wind farms.
- Engage in brainstorming sessions to collaboratively compile a comprehensive list of roles and responsibilities within the wind energy sector.
- Apply their understanding by creating imaginative "day-in-the-life" diaries for construction workers, depicting the challenges, routines, and unique aspects of wind farm development.

Materials

- Worksheet: Day-In-The-Life
- Internet access
- Notepad and pen, or word-processor on laptop

MM3: Offshore Renewable Energy
L3 Exploring Offshore Wind Farms

ACTIVITY INSTRUCTIONS

Activity 1: Virtual visit to Arbuckle Wind Farm (10 minutes)

1. Watch the video Virtual Wind Farm Tour Ep 3: Wind Farm Drive [3:02 mins] of a virtual tour of the Arbuckle Mountain wind farm in Oklahoma in the USA given by Operations Manager Andy Woods.
2. After watching the video, invite learners to share with the class what the most interesting part of the video was for them.

Activity 2: Virtual visit to Hornsea Wind Farm (10 mins)

1. Watch the video 360° Look Inside the World's Largest Offshore Wind Farm: Hornsea 2 [4:53 mins] of a 360° tour of the world's largest offshore wind farm – called Hornsea 2.
2. After watching the video, invite learners to brainstorm as a group, all the different roles/ jobs that feature in the design, construction, and maintenance of wind farms.

Activity 3: Create a day-in-the-life diary (30 mins)

1. After watching the three videos, have learners fill in the worksheet: a day-in-the-life for a typical construction worker involved in the development of wind farms. You might consider including information on the weather conditions, safety protocols, the journey out to sea, the shift times, the size of the turbines being constructed and the remoteness of the work.
2. From this worksheet, have learners create an infographic for their day-in-a-life.
3. Have each group share with the class.

REFLECTIVE EXERCISE: 3-2-1

- Three things they feel they have learnt from the exercise
- Two things they found most interesting and would like to explore more
- One – their opinion they have about the site / exercises

Use Post-its or a Mentimeter survey - mentimeter.com to gather reflections

MM3: Offshore Renewable Energy
L3 Exploring Offshore Wind Farms

EXTENSION / REDUCTION ACTIVITIES:

Reduction: For a shorter class, skip viewing the second video, or leave out the infographic.

Extension: For a longer class, watch the additional video in the media box and create a series of three diary entries in Activity 3.

Option B: Have learners create a digital infographic using canva.com and share with the class. Or have learners create a short tik-tok on a day in their life as a construction worker on an offshore wind farm. See Media Communication Video Micro-Module.

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

Virtual Wind Farm Tour Ep 3: Wind Farm Drive [3:02 mins] https://www.youtube.com/watch?v=uZci8D1JQmg&ab_channel=EDPRenewables

360° Look Inside the World's Largest Offshore Wind Farm: Hornsea 2 [4:53 mins] https://www.youtube.com/watch?v=M6g96aLHmQs&ab_channel=%C3%98rsted

A virtual of tour Burbo Bank offshore wind farm in 360° [2:26 mins] https://www.youtube.com/watch?v=BCgwv3dCGg8&ab_channel=%C3%98rsted

Local Trip / Expertise / Additional Work and Assessments

Search online to see if you can find other virtual tours of other wind farms. There might also be other interviews with people who work on wind farms that could be interesting to watch.

Do you know anyone in your local community that works on wind farms? Perhaps invite them to deliver a talk to the class, or to interview them about their job?

MM3: L3 WS A-DAY-IN-THE-LIFE

Complete the following chart with what you think a day-in-the-life of a typical offshore wind-farm construction worker is like:

Location	
Date	
8am	
9am	
10am	
11am	
12pm	
1pm	
2pm	
3pm	
4pm	
5pm	

MM3: L3 WS A-DAY-IN-THE-LIFE

Complete the following chart with what you think a day-in-the-life of a typical offshore wind-farm construction worker is like:

6pm	
7pm	
8pm	
9pm	
10pm	
11pm	

MM3: L3 WS A-DAY-IN-THE-LIFE

Now, from your table above, create an infographic of your construction worker's day.

See examples of infographics here:

https://visual.ly/community/Infographics/technology/day-life

https://www.behance.net/gallery/64936517/A-Day-In-The-Life

Step 1: Define the Purpose

- Decide on the purpose of your infographic. What do you want to convey about the construction worker's daily routine?

Step 2: Plan Your Content

- Make a list of the key activities and events you want to include in your infographic. Think about what makes their day unique and interesting.

Step 3: Choose a Layout

- Determine the layout of your infographic. Will it be a vertical or horizontal design? You can also browse online templates for inspiration.

Step 4: Create Sections

- Divide your infographic into sections or time intervals (e.g., morning, afternoon, evening).
- Use a ruler or grid lines if you're drawing on paper to keep your sections neat.

Step 5: Design Icons and Graphics

- Create icons or small illustrations to represent each activity or event in their day. These visuals should be simple and easy to understand.
- If you're using digital tools, you can find free icons or design your own.

Step 6: Add Text

- Write short descriptions or labels for each activity or event. Be concise and use clear, legible fonts.
- Include the time or approximate time for each event to give a sense of their daily schedule.

MM3: L3 WS A-DAY-IN-THE-LIFE

Step 7: Add Colors

- Use colours to make your infographic visually appealing. You can assign specific colours to different sections or activities.
- Ensure that your colour choices are harmonious and easy to read.

Step 8: Create a Title and Introduction

- Add a catchy title to your infographic, such as "A Day in My Life" or something more creative.
- Include a brief introduction that sets the context for their day.

Step 9: Arrange Elements

- Arrange your icons, text, and graphics within each section, following a logical sequence from morning to night.
- Ensure that your infographic flows smoothly and is easy to follow.

Step 10: Review and Edit

- Double-check your infographic for accuracy, clarity, and any spelling or grammar errors.
- Ask a friend to review it for feedback.

Step 11: Finalise and Share

- Make any necessary revisions based on feedback.
- If you're creating a digital infographic, save it in a format suitable for sharing (e.g., JPEG, PNG, PDF).
- Share your "Day-in-the-Life" infographic with the class.

SDG3 Eco-Agency: Supporting Youth-Led Climate Action

Standalone TY Unit

Lesson 9 Exploring What we CAN do Action 2 - Connect: The More than Human World

Subject Areas: Climate Action and Sustainable Development, CSPE, SPHE

Lesson Title and Summary: Exploring What We CAN do Action 2: Connect - The More Than Human World

With the abundance of information available 24/7, eco-anxiety can be triggered by people immersing themselves in eccessive information gathering and social media scrolling. Connecting with the more than human world enables us to develop our own "Resilience Toolbox", helping use to have choice and voice in causes we believe in that align with our values and those of the UN Sustainable Development goals and the Earth Charter.

Vocabulary:

Connection, Eco therapy, Interconnected, Mandala, Mindfulness, Nature,

In this lesson, the learner will:

- Develop understanding of mindfulness
- Understand the benefits of nature connection and eco-therapy
- Experience mindfullness and nature connection meditation exercise
- Create a nature mandala

Materials

- Teacher's Guide: Be Calm, Connected and Creative
- Worksheet: Be Calm, Connected and Creative

SDG3 Eco-Agency: Supporting Youth-Led Climate Action
L9 Exploring What we CAN do Action 2 - Connect

ACTIVITY INSTRUCTIONS

Activity 1 Connect: Mindfulness (15 mins)

1. Take learners to a quiet and peaceful outdoor space.
2. Invite learners to sit in a large circle and explain that as a group they are going to be guided through a mindfulness exercise.
3. Explain that although talking with others and sharing thoughts and feelings is important, learning how to self soothe and self regulate is equally important.
4. Encourage learners to take a deep inhale and exhale before starting and when ready begin.
5. Choose either to dictate the script yourself from the Teacher's note: Mindfulness Meditation Script or play and join in yourself in participating in the recorded guided exercise. See Teacher's Notes for information of the choices.

Activity 1 Connect: Mindfulness and Resilience (10 mins)

1. Ask learners to pair up and when you share two words have them briefly share with a partner what their understanding is of each word. Share the words: "Mindfulness" and "Resilience"
2. Share the mindfulness explanation and distribute one copy per pair of the Worksheet and ask learners to look at the Mindfulness activity
3. Go through instructions and check understanding then ask learners to share thoughts on how therapeutic support and creativity might prove helpful and how learning about the which of the Sustainable Development Goals or Earth Charter pillars they have learned about might align with supporting resilience building.

Activity 3 Connect: Be Creative (25 mins)

1. Using the Worksheet: Be Calm, Connected and Creative's Mandala Support section, explain what a mandala is and the difference between a traditional mandala and a nature mandala, key is the impermanence of the nature mandala.
2. Task learners with gathering materials and invite them to make their own Nature Mandalas either individually or in pairs or groups.

REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks
- Two things they found most interesting and would like to explore more
- One – their opinion they have about the tasks

Use Post-its or a mentimeter poll www.mentimeter.com to gather learners' reflections

SDG3 Eco-Agency: Supporting Youth-Led Climate Action
L9 Exploring What we CAN do Action 2 - Connect

REDUCTION / EXTENSION ACTIVITIES

Reduction: For a shorter class, complete only Activity 1 and 2 only allowing learners to explore the site / location and gather where possible / apprpriate materials for their nature mandala, which they can complete in another class or a linked class e.g. Art.

Extension: For a longer class, allow 40 minutes for Activity 3

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

Article: What is Eco0anxiety, and how can mindfulness help? https://www.mindful.org/what-is-ecoanxiety-and-how-can-mindfulness-help/

Video: How to turn eco-anxiety into positive action [32:52min] https://www.bupa.co.uk/newsroom/ourviews/eco-anxiety

Animation: Let's talk about anxiety [4:33min] https://youtu.be/dknTQktH5Z0 [

Video: Tara Brach Meditation On Facing the Fear of Climate Change (2022). [10:19min] https://youtu.be/MCavu3qcsAE

Mindfulness Script: https://www.metaphoricallyspeaking.com.au/mindfulness-in-nature/

Article: Sand Mandala in Tibet and Its Profound Philosophy https://www.tibettravel.org/tibetan-arts/sand-mandala.html

LOCAL TRIP / EXPERTISE / ADDITIONAL WORK AND ASSESSMENTS

Encourage learners to spend 1 hour per day for one week in natural spaces and engaging in a guided meditation of their choice followed by noticing and photographing patterns they observe in nature. Have learners share their observations on a safe collective forum or the school's digital space in a class folder.

Encourage learners to keep a Nature blog or journal documenting their observations and thoughts see Dara McAnulty's Diary of a Young Naturlist's Blog for inspiration https://daramcanulty.com/blog/

L9 Teacher's Guide Be Calm, Connected and Creative

Activity 1: Connect Mindfulness and Nature

For this activity you will need a calm and peaceful natural outdoor space like a field, park, beach or forest.

- Ensure learners are appropriately clothed and have comfortable footwear for being outdoors.
- Ensure you have the necessary permissions.

Guided meditation exercise choices are:

Choice 1: dictate the mindfulness meditation script exactly as written. Remember to pace yourself and use a calm and welcoming tone.

Choice 2: play the recording sound only of the guided meditation by the well known psychologist, meditation teacher and author - Tara Brach. See Media Box for link. For this a device and speaker is required.

Mindfulness and time spent in natural spaces and around the other than human world has been said to help people cope with eco-anxiety through building psychological resilience.

Mindfulness Meditation Script - Bianca Peel 2023

Welcome to this mindfulness meditation session designed to help you connect with nature. Find a comfortable seated or lying position, close your eyes if you wish, and take a few deep breaths in through your nose and out through your mouth. Let's begin.

1. Start by feeling the ground beneath you, connecting with the Earth. Visualise roots extending from your body into the soil, anchoring you to the ground. You are firmly planted, just like the trees in the forest.
2. Shift your focus to your breath. Inhale slowly through your nose, feeling the fresh, crisp air entering your body. Exhale gently, releasing any tension or worries with your breath. Imagine that with each breath, you're absorbing the energy of the natural world around you.
3. Let's listen to the sounds of nature. Notice the rustling of leaves, birds singing, the distant sound of water. Take a moment to appreciate the symphony of life that surrounds you.
4. Bring your attention to your body. Starting with your toes, gradually work your way up, focusing on each body part. If you find any tension or discomfort, imagine it melting away like ice in the warmth of the sun. Feel your body relaxing.
5. Picture yourself in a beautiful natural setting. You're standing at the edge of a tranquil forest. The trees rise high around you, and you can smell the earthy scent of the woods. Sunlight filters through the leaves, casting dappled shadows on the forest floor.
6. As you continue to visualise, imagine yourself taking a gentle walk through the forest. Feel the softness of the ground beneath your feet, hear the leaves crunching as you step. Touch the

rough texture of a tree trunk with your hand. Embrace the sensation of oneness with the natural world.
7. Take a moment to express gratitude for the natural world. Think about all the beauty and wonder that nature offers. Send a silent thank you to the environment for its gifts, and consider what actions you can take to protect and preserve it.
8. Slowly, begin to bring your awareness back to the room. Wiggle your fingers and toes, and when you're ready, open your eyes.

Thank you for joining this meditation and taking the time to connect with nature. Remember that you can always return to this practice whenever you need to find peace and connection with the natural world. Have a wonderful day.

Activity 3

Go over the Mandala and Nature Mandala examples section of the worksheet and ensure learners understand the key difference between a traditional mandala and a nature mandala

Nature Mandala Instructions:

1. Collect natural materials of different shapes, sizes and colours e.g. pebbles, leaves, flower petals
2. Ask learners to find a sheltered spot outdoors to make their artwork.
3. Ask learners, to sort their materials into shapes, sizes, textures and colours etc.
4. They should then pick a natural object as the centre of their circle
5. They should then begin to create an inner circle with objects that are connected by shape, colour or category e.g. leaves or other objects.
6. Continuing in themes, learners begin to work their way outwards expanding their circle until they are finished
7. Ask learners to take a photograph as a memento of their artwork and upload to their shared digital classroom.

Learners can continue to experiment with different patterns, natural materials or colours

L9WS: Activity 2 Supporting Information: Mindfulness

3 GOOD HEALTH AND WELL-BEING

> **Mindfulness is a type of meditation in which you focus on being intensely aware of what you're sensing and feeling in the moment, without interpretation or judgment. Practicing mindfulness involves breathing methods, guided imagery, and other practices to relax the body and mind and help reduce stress.**
>
> **Mayo Clinic**

TASK: In pairs consider the suggested three ways below

- brainstorm and discuss actions people can take in each way to start building their resilience toolkit
- share your thoughts with their partner on why time in nature can be beneficial to help cope with anxiety and eco anxiety.

ALIGN YOUR ACTIONS WITH YOUR VALUES
identify your values

LEARN HOW TO UNHOOK FROM A "WORRY LOOP"
have a digital detox

NOTICE (AND SHIFT OUT OF) THE URGE TO ISOLATE YOURSELF
call a friend or loved one

L9WS: Action 3 Connect: Nature Mandala

What is a Mandala

A mandala is beautiful design that's just a circle, named by an old language called Sanskrit. Picture in your mind a special sacred symbol that people in many different places and from diverse backgrounds love. It looks like the sun's heat, the moon's light, and the Earth's skin.

In Hinduism and Buddhism, the mandala is seen as a bright and important symbol. It's like a door to the universe and the very core of existence. Its elegant circle shape tells us about how everything is connected in the web of life. It's a gentle reminder that all the parts of life are woven together into a big, beautiful picture.

Tibetan Bhuddist Sand Mandala

The Nature Mandala

Similar to spiritual mandalas, nature mandalas creations reflect the idea of unity, forming a beautiful design that represents oneness. These mandalas are made using materials from nature, like leaves, petals, twigs, and stones, gifts from the Earth. Imagine an object, carefully designed with patterns that have the rhythm of life embedded. They always have a central feature with radiating and concentric circles as core aspects of the design.

Nature Mandala Examples

L9WS: Action 3 Connect: Making A Nature Mandala

A meaningful activity:
recognizes our connection to the earth and all its living things.

A way to express gratitude:
allows us the space and time to intentionally express gratitude for our earth and all its living things.

A reminder of the connections in life:
reminds us that everything is connected.

A learning opportunity:
learn about the earth and patterns found in nature and explore art, science, religion and life itself.

A time to observe natural patterns:
the chance to observe natural patterns like seasons, moon phases, the tides, and life and death.

A fun and creative activity:
can be done independently or with a larger group.

MATERIALS

- Use organic materials found in nature. Things like twigs, leaves, grasses, flowers, berries, pinecones, and acorns work well.

INSTRUCTIONS

- 1. Pick a peaceful place out in nature to create your nature mandala. Then, you will need to gather some organic materials around you to use. Things like twigs, leaves, grasses, flowers, berries, pinecones, and acorns work really well.
- 2. To create your nature mandala, place a meaningful item in the center. Then start placing other items you gathered near the center first and continue moving outward from the center until you've created a circular design.
- 3. Continue making patterns until your items are used up and your nature mandala looks complete. And remember, you can create it however you like! You could use bright colors or muted earth tones. Make it big or small. Make it as simple or complex as you want.

SDG3 Eco-Agency: Supporting Youth-Led Climate Action

Standalone TY Unit

Lesson 10 : Youth Leaders and Change Makers

Subject Areas: Climate Action and Sustainable Development, CSPE, SPHE

Lesson Title and Summary: Youth Leaders and Changemakers

In this lesson, learners will consider the qualities of Youth Leadership and undertake a personal leadership audit. They will consider the areas in their lives where they take roles and responsibilities and identify their leadership qualities, such as initiative, responsibility, communication skills, and the ability to inspire and motivate their peers.

Developing choice and voice in causes learners believe in that align with their values and those of the UN Sustainable Development goals and the Earth Charter, can help build both personal and local resilience.

Vocabulary:

Connection, Eco therapy, Interconnected, Mandala, Mindfulness, Nature,

In this lesson, the learner will:

- Develop understanding of youth leadership
- Understand the roles and responsibilities of youth leadership
- Identify their own leadership skills
- Identify a youth leader that inspires them and share this with their peers through a presentation

Materials

- Worksheet: Youth Leaders and Change Makers - Instructions and Guide
- Teacher's notes: Youth Leaders and Change Makers Case study examples

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ACTIVITY INSTRUCTIONS

Activity 1 Youth Leadership Skills Audit (20 mins)

1. Ask learners to work in pairs, and refer them to the Worksheet: Leadership Skills Audit.
2. Learners will consider the qualities of leadership and undertake a personal leadership audit using their own experience. They will consider the areas in their lives where they take roles and responsibilities and identify their leadership qualities, such as initiative, responsibility, communication skills, and the ability to inspire and motivate their peers.
3. As they are working, project or recreate on the board, the Class Leadership Skills table
4. After 10 mins, ask the class to contribute to the collective 'Class leadership Skills' using the skills they have individually identified
1. Photograph the completed table and add to the classes learning digital learning environment e.g. Teams folder for the class.

Activity 2 Youth Leaders and Change Makers - 30 mins

1. Working in pairs, learners will begin to develop a short presentation on a Youth Leader that inspires them.
2. Ask learners to begin working through the Worksheet: Youth Leaders and Change Makers in preparation for their presentation.
3. Learners can use the internet to research Youth leaders example themes could be linked to the SDGs e.g. SDG2, Food Waste SDG3 - Teen Mental Health, SDG11 - Community Leadership, SDG14 - Ocean Conservation or they could focus on the Teacher's notes: Youth Leaders and Change Makers Case study examples to form a gallery of youth leadership
4. Learners will work through the worksheet and develop their presentations over a number of lessons as required.
5. This activity is also supported by Lesson 11, as the learners move from the research stage to the presentation stage.

REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks
- Two things they found most interesting and would like to explore more
- One – their opinion they have about the tasks

You can use Post-its or a mentimeter poll www.mentimeter.com to gather learners' reflections.

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REDUCTION / EXTENSION ACTIVITIES

Reduction: For a shorter class, complete only Activity 1 and watch one of the youth videos in the nedia box.

Option B: Undertake activity 2 only.

Extension: For a longer class, allow learners to begin research the youth leaders they might choose for their presentations.

Option B: Introduce the SDG Impact gallery project - see Local trip / Expertise / Additional Work and Assessment Boc. Share examples from Teacher's notes: Youth Leaders and Change Makers to consider some of the youth leaders and discuss what their impact is

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

Video: How to turn eco-anxiety into positive action. [32:52min].
https://www.bupa.co.uk/newsroom/ourviews/eco-anxiety

Video: Young Leadership principles - hope and expectations for the future [6:33 mIn]
https://www.youtube.com/watch?v=tBfu5yNHPk0

Video: Youth Leadership: Changing the World Through Service [10.37]
https://www.youtube.com/watch?v=SMS-QPw1DFY

Video: The Power of Youth - Changing the World [7:44 min] https://www.youtube.com/watch?v=zqwc1ik93_0

LOCAL TRIP / EXPERTISE / ADDITIONAL WORK AND ASSESSMENTS

Share the case study examples and have learners create an SDG Impact gallery. Use the examples and some of the learners' to create 17 posters for the school showing youth leadership and impact. Posters could follow a simple format for visual cohesion and serve as a focused activity for the Take 1 programme launched during Take 1 Week.

Take 1 Programme https://www.take1programme.com/ aims to support schools to communicate, raise awareness of, and embed Education for Sustainable Development as part of a broad curriculum, through the UN Sustainable Development Goals

L10TG Youth Leaders and Change Makers Examples

SDG2, Food Waste Abi Ramanan: Abi is the co-founder and CEO of ImpactVision, a software platform that uses machine learning to reduce food waste. She is also a co-chair at the World Economic Forum's upcoming Annual Meeting of the New Champions.

SDG3 - Teen Mental Health, Kwiri Yang: Kwiri is the founder and CEO of LifeGyde. The online platform is a space for young people to seek advice, guidance and support.

SDG 3, 10 - Paul Ndhlovu, Paul works as a radio champion at Zvandiri in Zimbabwe to help end poverty, ensure good health and wellbeing, and access to quality education for people living with HIV and AIDS.

SDG4 - Early years edutainment, Doreen Kessy: Doreen is COO of Ubongo, a multi-media educational platform in Africa. Using the power of entertainment and mass media, the company provides educational material at low cost and high volume and scale

SDG 5 - Gender Justice, Ronelle King: Ronelle from Barbados is a multi-award-winning Gender Justice Activist and the Founder of Life In Leggings, a Caribbean Alliance against gender-based violence. In 2016, Ronelle founded the viral "#LifeInLeggings" hashtag which was mobilized to create a safe space for women who had experienced sexual violence.

SDG11 - Sustainable Architecture, Basima Abdulrahman: Basima is an Iraqi structural engineer who is passionate about the environment. She founded Kesk, one of Iraq's first sustainable architecture consultancies, to build greener buildings in her homeland

SDG12 - Social Enterprise, Oana Toiu: Oana is the founder and general manager of Social Innovation Solutions, which offers training and consultancy in social innovation and entrepreneurship. Before that, she led the team that set up Mesteshukar BuitQ, a social enterprise focused on traditional Roma crafts and skills.

SDG13: Climate Advocacy, Eddy Frank Vásquez-Sánchez: Eddy, is a youth climate and oceans advocate from the Dominican Republic. In 2016, with other youth fellows, he created ''Juventud Sostenible'', a platform for youth advocacy to help achieve sustainable development and ensure that young people are actively included in the process.

SDG14 - Ocean Conservation, Finlay Pringle, Finlay is a 14-year-old Fridays4Future campaigner ocean enthusiast and shark ambassador from Ullapool, in N. Scotland.

SDG 5, 17: Heela Yoon; Heela, is the Founder of Afghan Youth Ambassadors for Peace Organization (AYAPO), a grassroots NGO working in the Eastern provinces of Afghanistan focusing on UN Security Council Resolution 1325 on Women, Peace and Security and Resolution 2250 on Youth, Peace and Security, as well as local peacebuilding.

L10WS:Youth Leaders and Change Makers - Instructions

Action 1 Youth Leaders and Change Makers - Instructions

Research some inspirational young people and their call to action and present a case study.

Case study (n.) A case study requires you to analyse and write about a person, a scenario or an organisation

1

STEP 1: IDENTIFY A YOUTH LEADER TO RESEARCH

2

STEP 2: THE RESEARCH STAGE - GATHER INFORMATION

3

STEP 3: PREPARE FINDINGS FOR PRESENTATION

Step 1
Choose a youth leader/ activist/advocate from your local or national community or someone from the international community and find out as much information as possible about your chosen leaders. What are questions you might ask them and the responses you think you might get?

Step 2:
Gather information using the question prompts and the themes and sources on the Flipped Classroom: Youth Leaders and Change Makers - Guide page. You may use the options or choose your own inspirational leader to research.

Step 3
Prepare your findings to present to peers in a 5-minute presentation, including time for a Q&A session. You have creative freedom as to how you will present your findings. Examples below:

Interactive:
Eg. A scavenger hunt you you create with guided clues that lead to key information which you will then elaborate on with further explanation of what you learned.

Artistic:
This could be a painting, a digital drawing, or sculpture. Ensure you verbally present your information to accompany your creation.

10WS:Youth Leaders and Change Makers - Instructions

3 GOOD HEALTH AND WELL-BEING

2

STEP 2: THE RESEARCH STAGE - GATHER INFORMATION

Question Prompts

1. Who is your choice of youth leader or change maker? Choose your own or from one of the three below.
2. What is their area of interest? What are they raising awareness of? advocating for?
3. What is their motivation and inspiration?
4. What is their objective?
5. What have they achieved to date?

WHAT?

Eco Action

WHO?

Example: Clover Hogan, 24-year-old climate activist and the founding Executive Director of Force of Nature - a youth non-profit mobilising mindsets for climate action.

3

STEP 3: PREPARE FINDINGS FOR PRESENTATION

L10WSb Leadership Skills Audit

Working in pairs, please give definitions for the following 5 words, you can use a dictionary and then rewrite them

Leadership

Delegation

Teamwork

Planning

Organisation

L10WSb Leadership Skills Audit

Working in pairs please discuss and organise the following skills in order of most essential to least essential for a leader to have.
Using a scale of 1 to 4 with 1 being the most essential and 4 being the least essential, number the following skills and give a reason for you decision

Delegation

Teamwork

Planning

Organisation

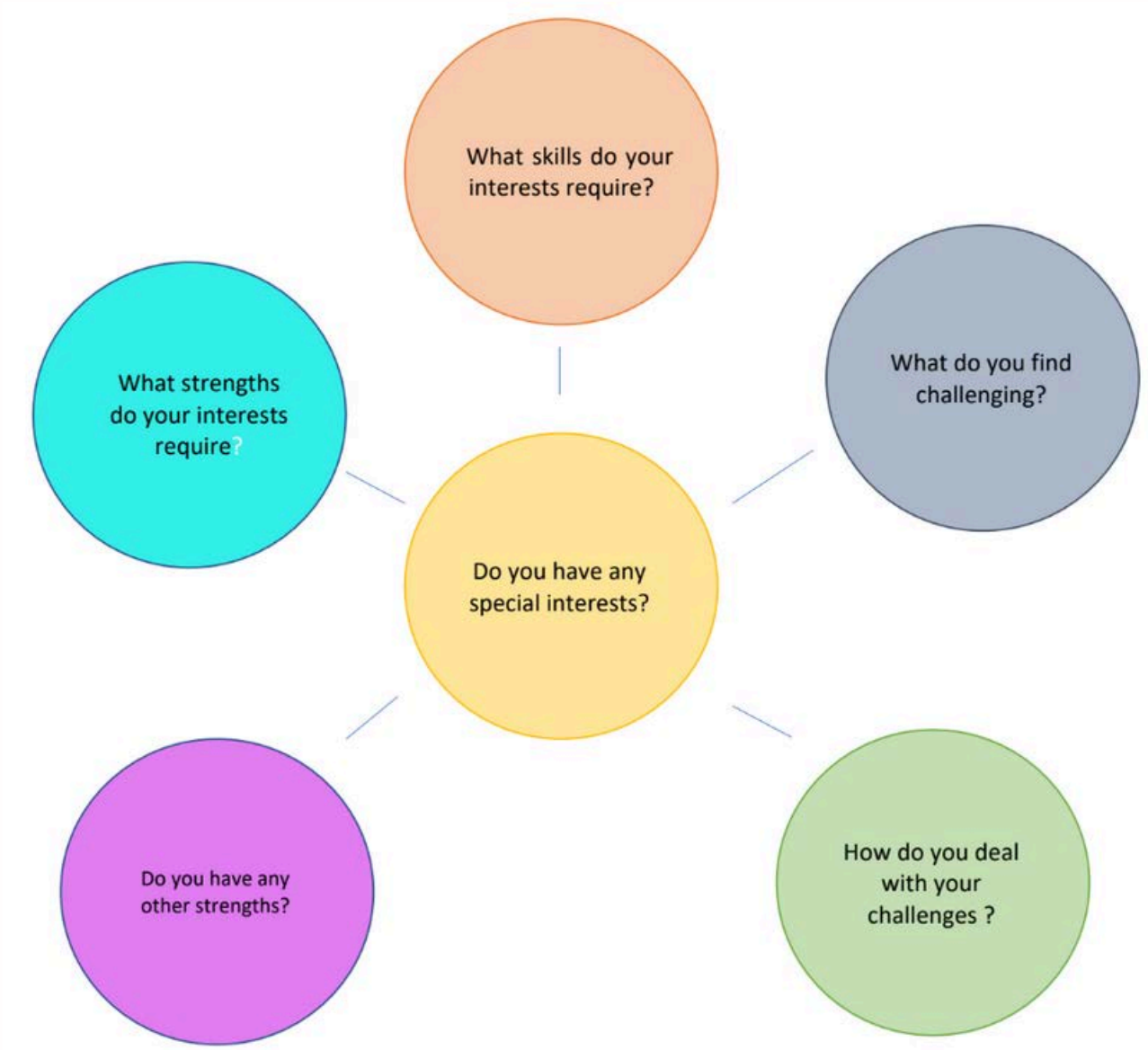
Communication

Finally are their any skills you would add?

Would they be more essential or important that the ones already listed?

L10WSb Leadership Skills Audit

Individually, consider the areas in your life where you take roles and responsibilities and identify your leadership qualities, such as initiative, responsibility, communication skills, and the ability to inspire and motivate your peers.



Use the Map of Me, starting with your hobbies / interests to get started and add all the skills invovled.

Think about how you might need to communicate with others, what you find difficult and how you overcome it, think about the leadership skills you have already defined - planning, delegation, organisation and team work to help you identify your own leadership skills in the activities you do.

LESSON SUPPLEMENT EVALUATING SOURCES THE CRAAP TEST

FLIPPED CLASSROOM WORKSHEET

This is C.R.A.A.P.

When conducting research it is important to find quality information and avoid misinformation or “fake” information. Therefore critically evaluating your sources is a necessary part of research.

What do you think is meant by the following terms when critically evaluating your sources? Write your ideas below.

1. Currency:
2. Relevance:
3. Authority:
4. Accuracy:
5. Purpose:

Now WATCH :
https://youtu.be/EyMT08mD7Ds

Take notes about the C.R.A.A.P. Test and what you should be looking for when critically evaluating sources to discuss later in class.

C	R	A	A	P

LESSON SUPPLEMENT EVALUATING SOURCES THE CRAAP TEST

This is C.R.A.A.P. -EVALUATING SOURCES WORKSHEET

When critically evaluating sources it's important to consider the 5W's:

- Who wrote this?
- What is the purpose of the resource?
- When was the resource published?
- Where is the information from?
- Why is this resource reliable?

TASK:

You are going to evaluate a source as directed by your teacher.

Try to answer the questions on the following pages relating to:

CURRENCY
RELEVANCE
AUTHORITY
ACCURACY
PURPOSE

After evaluating this source, decide if you think you would use it for your assigned task? Why or why not? If you are not sure, explain why.

LESSON SUPPLEMENT EVALUATING SOURCES THE CRAAP TEST

This is C.R.A.A.P. - Evaluating Sources Questions

Cite the source you are evaluating:

Currency: the timeliness of the information

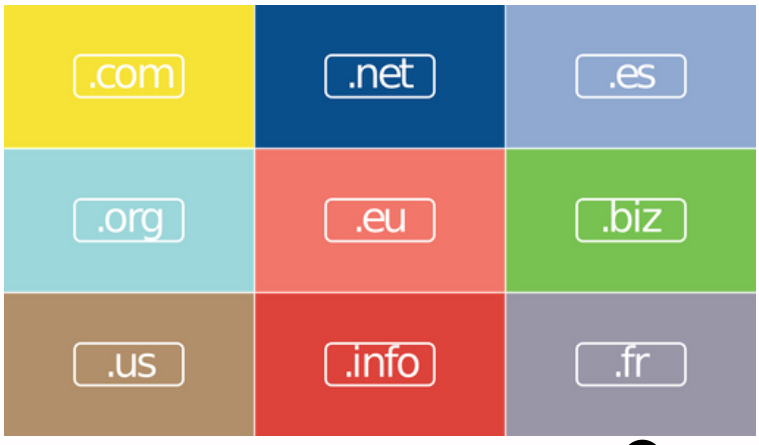
- When was the information published or posted?
- Has the information been revised or updated?
- Is the information current or out-of date for your topic?
- Are the links functional?

Relevance: the importance of the information for your needs

- Does the information relate to your topic or answer your question?
- Who is the intended audience?
- Is the information at an appropriate level (i.e. not too elementary or advanced for your needs)?
- Have you looked at a variety of sources before determining this is one you will use?
- Would you be comfortable using this source for a research paper?

Authority: the source of the information

- Who is the author/publisher/source/sponsor?
- Are the author's credentials or organizational affiliations given?
- What are the author's credentials or organizational affiliations given?
- What are the author's qualifications to write on the topic?
- Is there contact information, such as a publisher or e-mail address?
- Does the URL reveal anything about the author or source? Examples:
  - .com (commercial),
  - .edu (educational),
  - .gov (government),
  - .org (nonprofit organization),
  - or .net (network)



LESSON SUPPLEMENT EVALUATING SOURCES THE CRAAP TEST

This is C.R.A.A.P. - Evaluating Sources Questions

Cite the source you are evaluating:

Accuracy: the reliability, truthfulness, and correctness of the content

- Where does the information come from?
- Is the information supported by evidence?
- Has the information been reviewed or refereed?
- Can you verify any of the information in another source or from personal knowledge?
- Does the language or tone seem biased and free of emotion?
- Are there spelling, grammar, or other typographical errors?

Purpose: the reason the information exists

- What is the purpose of the information? to inform? teach? sell? entertain? persuade?
- Do the authors/sponsors make their intentions or purpose clear?
- Is the information fact? opinion? propaganda?
- Does the point of view appear objective and impartial?
- Are there political, ideological, cultural, religious, institutional, or personal biases?